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AMIGA SHOPPER

From the makers of AMIGA FORMAT

ISSUE 33 ● JANUARY 1994 ● £2.95

YOUR DEFINITIVE AMIGA GUIDE

OVER FIFTY PRODUCTS REVIEWED & RATED



Bumper Xmas present list inside: Image Engine • the Video Toaster and Prime Image Converter • KCS high density floppy drive • Blitz Basic • Caligari • One Stop Music Shop • GigaMem • hard drives • printers and much much more...

PLUS public domain, C programming, AMOS and AmigaDOS, the latest news, and all your problems solved in Amiga Answers



THE JAKKI BRAMBLES COLUMN

Well OK then you Mums and Dads, it's that time of the year again when letters to Santa are coming your way. We get a lot of phone calls at this time of year from you guys because it really isn't that easy to decide which of the mega bundles to buy. So this month we have an easy guide to help you make that really important choice.

Amiga 600 Single Drive - The ONLY home computer for **less than £200**. Suitable for the child fed up with paying out £40 for software for their Megadrive (software available from £9.99) or for the first time buyer. There are hundreds of software titles available including games, education, word processing, home accounts etc. Games available include strategy / role playing, titles where imagination is more important than aggression, learn to create animations not zap aliens aimlessly. **Age Group 8 - 13**

A600 Hard Drive - A more serious version of the above. The hard drive saves repeatedly loading and swapping floppy disks. Suitable for serious games players and applications such as database management for a student or home office environment. The Epic Pack is particularly useful for a foreign language orientated student. **Age Group 12 +**

Amiga 1200 Desktop Dynamite - The perfect solution for the student. You want him or her to have a computer to produce school work using quality Desktop Publishing software, he / she wants a dynamic games playing machine. This gives both of you what you are looking for. The software alone is worth over £300.You can expand this computer through the addition of hard drives, extra memory, accelerator boards whatever the option most suitable for producing any number of serious applications. Want to be a graphic artist, video producer, film director, cartoon animator, musician, mathematician, designer..... the only limitation to the machine is your imagination. **Age Group 14+**

Amiga CD32 - The choice for existing Amiga owners looking for the latest product in the range or for the dedicated console owner. Knocks the Sega for six with its State - of - the - Art graphics. (Colours on screen Sega = 64/ CD32 = 256 or 262,000) and processing speed (Sega = 16-bit / CD32 = 32-bit) To you or me this means that people who write the games can now display more colours on screen and the action can be even faster. Also be aware this is also a Compact disc player with full four voice stereo sound so you can play your favourite CD's when the kids are at school. Connects to standard TVs and most hi - fi's. **Age Group 10+**

I hope this info assists. With Commodores help I'm certain that there will be thousands of happy smiling faces on Christmas Day, but if you're still not sure give Indi a call they will be delighted to help.

P.S. Indi tell me that they are able to extend the ***"At Home Service"*** *on most new Commodore products to a full 3 years for as little as £39.99 through their agreement with* ***ICL****, the Giant European Warranty Company. Might be worth checking out for that extra peace of mind.*

Jakki Brambles

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Christmas is a very expensive time of year so here's an offer that really helps you buy in time for Christmas and spreads the cost over next year. Choose any Indi product (or mix of products) valued at over £200, pay 10% deposit and start paying again in 3 months time. **Here's how it works**, choose your products and telephone **Indi on 0543 419999** and ask for Credit Sales. We will ask you a few questions, explain to you what you will pay and when and then complete our credit check. Within 24 hours we will be able to clear your order and subject to status deliver your products to you.

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AMIGA CD32

FREE SOFTWARE

Lemmings, Oscar, Diggers



The exterior may be sleek but lurking inside the Amiga CD32 is a technological wonder.

At it's heart is the mightily powerful 68EC020 processor from Motorola. This contains the 32 - bit technology which has made the Amiga 1200 a runaway success throughout Europe.Alongside it is Commodore's unique custom AGA (Advanced Graphics Architecture) chipset - comprising three chips nicknamed Paula, Lisa and Alice.

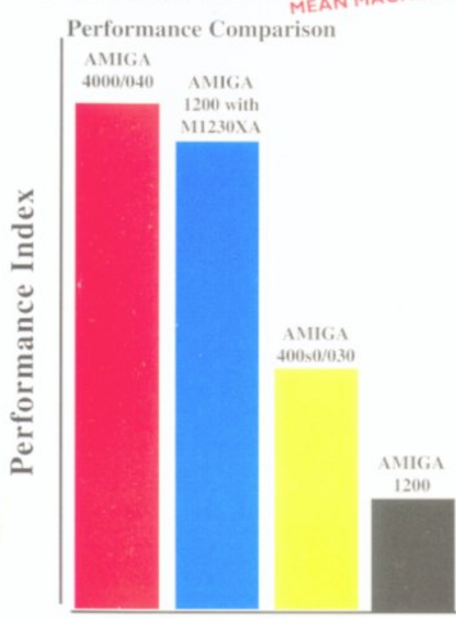
Together they make Amiga CD32 and awesome powerhouse of high speed graphics and stunning sound capabilities. In fact, the machine can display 256,000 colours on screen (compared to Sega's Mega CD which can only display 64) and has a total colour palette of 16.8 million colours.

Amiga CD32 also comes with a chunky 2 Meg of RAM (that's15 times more than Mega CD) and a double speed drive.

SPECIFICATIONS:

* 14 MHZ 68EC020 processor
* 2 Megs 32 - bit chip RAM
* 2 Joystick ports/controller ports
* S- video jack
* Composite video jack
* RF output Jack
* Stereo audio jacks
* Keyboard connector/ auxiliary connector
* Full expansion bus
* Headphone jack
* Headphone volume control
* External brick power supply
* Internal MPEG FMV expansion capability
* Multiple session disc capability

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Buy the superb new Amiga 1200 Desktop Dynamite Pack from Indi and we will send it to you for only 10% deposit with the balance over 6 months Interest Free
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If you find an identical product advertised in this magazine at at a lower price than the advertised Indi Price and available for immediate delivery then we will match that price*. Our way of ensuring that Indi customers have the guarantee of the very best service and the lowest price in town.

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The DMA Symbol.

AMIGA SHOPPER
ISSUE 33 • JANUARY 1994

IN THIS ISSUE

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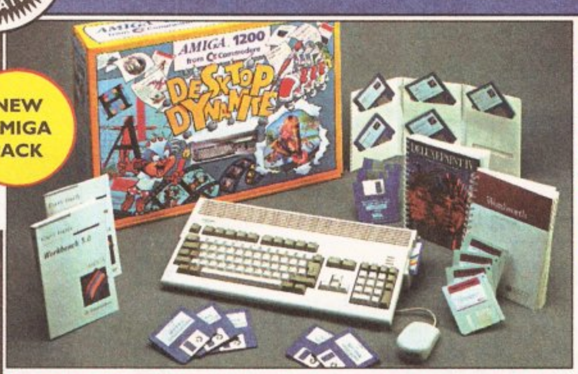
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The Amiga was never designed to accept 3.5" drive
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AMIGA A4000



NEW PRICE

It's here - The new Amiga 4000/030

The NEW Amiga 4000/030 features a EC68030 processor running at an incredible 25Mhz, and upgradable at a later date to a faster processor. The 4000/030 has a powerful 2 Mb of 32 - bit RAM expandable to 18 Mb using industry standard 32 - bit Simms module. In line with the Amiga Flagship 4000/040 the 4000/030 features the new AGA graphics chipset, giving you a massive pallet of 16.8 million colours. A range of hard drive options are available from 80 - 240 Mb and includes a SCSI option.

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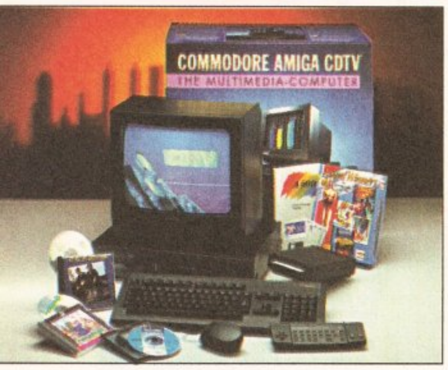
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AMIGA CDTV SOFTWARE

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Software titles in green are compatible with the new Amiga CD32

AMIGA ACCESSORIES



Sharp Monitor / TV

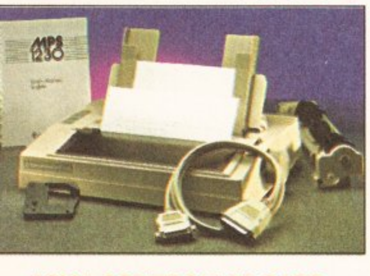
The Superb Sharp 14" Monitor / TV provides a real alternative to a Commodore Monitor with full function remote control 39 channel electronic auto search tuning, digital on screen display and 1.5 watt mpo audio output, all you need to know is the **Low, Low Indi Price.**
So, unless you need High resolution graphics look no further, the Sharp Monitor / TV is the product for you complete with connectivity cable and including 12 Months Warranty

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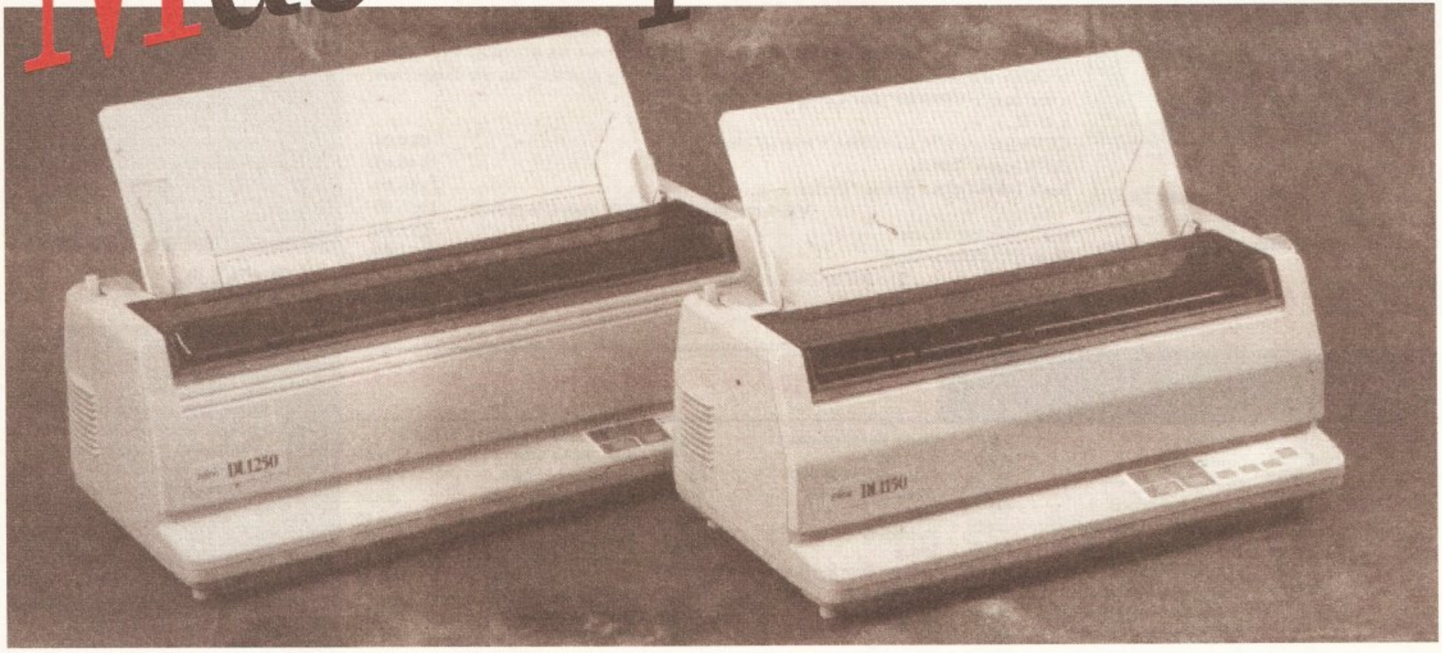
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COMMENT



The editor, Cliff Ramshaw, offers his penny's worth...

So Commodore's restructuring efforts have yet to halt the huge losses the company is currently making. I say "yet to", rather than "failed to", because the magnitude of the losses *is* decreasing. Perhaps Commodore will be turning in a profit in six months' time.

It's clear that the A1200 and CD^{32} must succeed if Commodore are to stay afloat. Otherwise it's no more new owners, no more support for existing owners, and a gradually declining base of third-party manufacturers. They're both good machines at good prices, so let's keep our fingers crossed.

At least Commodore's court case shows that they're capable of taking the Amiga as seriously as we do. One worrying thing, though: did they really have to look in a magazine to find a list of productivity software? Imagine the head of Apple saying, "I know there's a word processor available for the Mac, but what on Earth is it called?"

Commodore defend serious Amiga over alleged Acorn slur

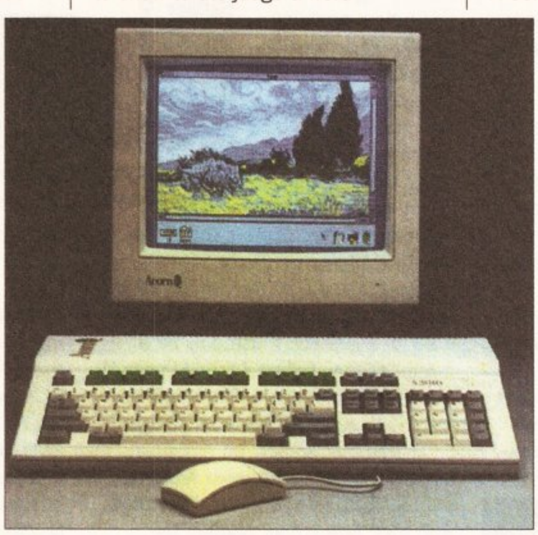
An educational video distributed by Acorn Computers has forced Commodore into demonstrating conclusively that the A1200 is capable of far more than just games.

The big C's move comes after Acorn began distributing their video via adverts in the national press. Entitled *The Home Computer Minefield*, the video was designed to help non-computer-literates choose the best machine for their needs. You can guess which machine came out on top. (Clue: it wasn't the Amiga.)

Commodore took exception to a sequence in the film where each contender in turn is removed from the running as it is found unsuitable to run either games, home office or educational software. Commodore believe that the video implies the A1200 is suitable for only games, and that the tape therefore gives a misleading impression about the Acorn machines' competitors. They therefore sued Acorn for defamation of goods (trade libel).

Commodore obtained an interlocutory injunction on 1 November, preventing Acorn from distributing the video for seven days. Commodore produced a long list of Amiga productivity software, culled from a current magazine, to demonstrate their case.

When the court was re-convened a week later, Commodore were able to show to the judge a word-processed document, containing text, a headline, scanned picture and signature, very similar to that produced on the Archimedes in the original video. The single-page document was created by Premier Vision, who managed to produce it in ten minutes to show just how quickly such a thing can be done with the Amiga. At this point, Acorn decided to voluntarily withdraw their video, although they still claim that they intended no slur on their competition. A Commodore spokesman commented to us that Acorn withdrawing the video yet refusing to admit liability seemed "contradictory".



This is an Acorn A3010. Commodore have gone to court to insist that an A1200 can be just as "serious".

Acorn are in the process of producing a new video, one that happily avoids drawing any comparisons with competing machines. Meanwhile, they have sent letters to all those who have already received copies of the first video (some 17,000 people), correcting any misleading information they may have given about the Amiga.

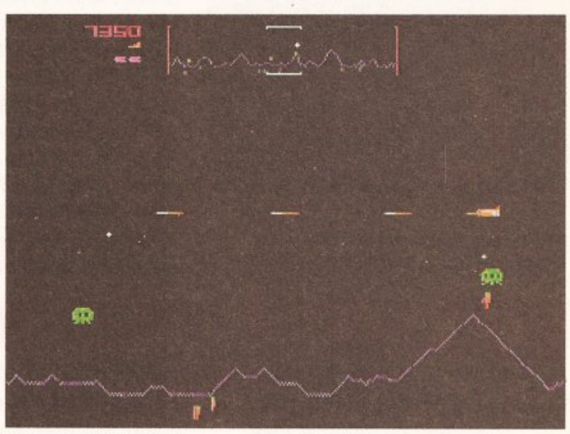
Commodore had hoped to be given the names and addresses of these recipients, but have had to put up with information from Acorn's solicitors telling them how many corrections have been mailed out. The case is continuing, with Commodore still claiming legal costs and damages.

More zap for Blitz Basic

Acid Software, makers of *Blitz Basic*, have set up an office in the UK. The new office will enable the company to give UK users of the development language much better support than was possible from Acid's home base in New Zealand.

Acid Software Europe will be selling *Blitz Basic II* – thought by many to be a serious rival to AMOS – for £69.95. The company will also be setting up a user club and a bulletin board system, and distributing the *Blitz User Magazine* (or *BUM*, for the acronymically-fixated), which has been published elsewhere in the world for two years now.

The magazine comes with a cover disk, and is particularly important for *Blitz* users because it often contains additions to the language. The latest edition comes with an AGA display library, plus support for ASL and GadTools. The former means that programmers can take advantage of the features of the newer Amigas such as 24-bit palettes and 64-pixel-wide sprites. The ASL and GadTools support means that applications programmers can use *Blitz* commands to open Amiga-standard file, font and screen mode requesters, as well as create cycle gadgets, radio buttons and list selectors.



Blitz Basic's blinding speed and total control over the hardware makes it ideal for games programmers.

You can contact Acid Software Europe on ☎ 071 482 4066. See also our review of *Blitz Basic* on page 55.

Virus alert

Beware – disk 919 in the Fred Fish collection contains a virus. This disk is also one of the set that appears on Fred Fish's October CD-ROM.

The virus, a particularly dangerous one known as "Saddam Hussein", will only affect machines running either Kickstart 1.2 or 1.3, and can only be activated if the file containing it is run by the user. That file is **BBBF/FileVirLib/VirusTo Test/Saddam_Hussein_virus**.

Most anti-virus programs, including those supplied with recent issues of *Amiga Shopper*, will find and remove the virus easily. A safe version of the CD and disk should be available by the time you read this.

New products at Future Show

AS WELL AS all that games nonsense that we won't concern ourselves with here, the Future Entertainment Show, which took place at Olympia on November 11 to 14, played host to a number of juicy new products for the discerning Amiga owner.

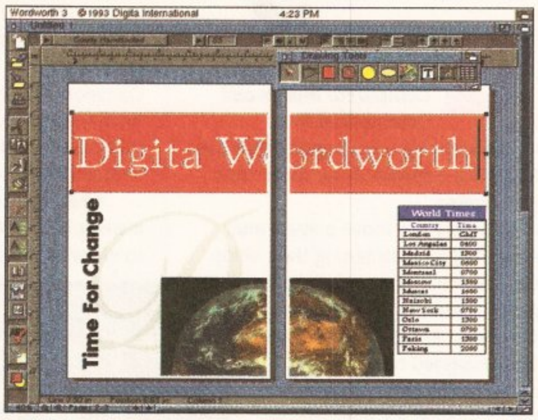
Most important of these was the Full Motion Video Module for the CD^{32}. The add-on cartridge, demonstrated in prototype form at the show, enables the machine to play back video footage recorded on compact disc. The quality of the images is reckoned to be better than that of VHS videotape. We saw CD32 being used to play back two songs by the Eurythmics – *Love Is a Stranger* and *Sweet Dreams* – and a couple of Commodore promotional films, and damned fine they looked, too.

Up to 72 minutes can be fitted on to a single disc, by virtue of a special compression method, known as MPEG, recently agreed by key players in the computer and video industry. The special chips that are needed to decode the video information have only recently been made available, and Commodore are among the first in giving their machine the capability to use them.



You can achieve high-quality colour prints like this for under £1,000, thanks to Fargo's Primera printer.

Full Motion Video is expected to create something of a revolution, enabling owners of compatible systems to listen to CDs, watch movies and play music accompanied by video footage, all with the same unit.



Digita's Wordworth 3 boasts a much-improved user interface as well as a whole load of new features.

Owners of Commodore's CD^{32} should be able to jump on the bandwagon by the second week of December, when the FMV add-on is expected to go on sale for £199.99. It can only be a matter of time before CD-ROM units, along with compatible FMV modules, are made available for other Amigas.

Fargo Electronics, an American company unknown to most Amiga enthusiasts, were drawing the crowds with their new colour printer. The Primera printer has already enjoyed considerable success in the States among PC and Mac users; Fargo now hope to repeat their performance in the UK by winning over us Amiga-types. Their printer comes in two versions. The cheaper, which creates pages via thermal transfer, comes in at £821.32.

Far better quality can be achieved with the £1,055 dye-sublimation printer, which produces remarkable results, normally achievable with printers costing at least twice the price. (The thermal transfer model can be upgraded to this specification for £234.) Both models come with an Amiga Preferences printer driver, and are available from Power Computing on ☎ 0234 843388.

Power Computing themselves were showing off one or two new products. They're now selling internal versions of their high-density floppy drives, capable of storing 1.76Mb of information on a single disk. Internal models cost £75.95, or £79.95 to fit the A4000. Also from Power is the PC1208 memory expansion card for the A1200. The card will take up to 8Mb of extra memory via plug-in SIMM modules, providing zero wait-state access (which is to say the Amiga's processor never has to wait around for the memory). The card also includes a real-time clock, and space for a 68881 or 68882 maths co-processor. Prices start from £69.95 for the bare board.

Digita International, show stalwarts that they are, were previewing *Wordworth 3* to an eager public. The program promises to be another contender for the title of best Amiga word processor. Among its numerous features are: Auto-Correction, which will correct simple typing errors as well as a acting as a simple macro processor; modularity, meaning you only need to install those parts of *Wordworth* you need; an improved user interface including a floating toolbar; support for PostScript fonts; better scalable graphics and colour printing; and advanced typographical text effects.

Another byte at sound cherry

America company Digital Audio Design have released Wavetools, a 16-bit direct-to-disk hardware and software combination.

Wavetools will record stereo sounds in AIFF16 file format direct to any Amiga hard drive, with a frequency response of 10Hz to 20kHz. It comes in the form of a Zorro II plug-in card, compatible with the A1500, A2000, A3000 and A4000, though the manufacturers recommend that A1500s and A2000s should be accelerated.

Wavetools' software enables the user to cut and paste between different files and digitally mix tracks. The product maintains an SMPTE time code to enable sounds to be synchronised with video and animations. It costs $350 and is available from Digital Audio Designs in the US, ☎ 0101 714 562 5926.

Wavetools' direct competitors are of course the long-established AD516 and AD1012 audio cards from SunRize Industries. SunRize have recently announced an upgrade to their accompanying software, *Studio 16*. Version 3's features include: an intuitive line-based cue list, automatic fades and cross fades, automated mixing, automated punching in and out, external MIDI mixer support, SMPTE chase, assignable tracks and multiple digital audio card support. When used with two AD516 cards, *Studio 16* can play back 12 16-bit audio tracks from the Amiga's hard disk.

Studio 16 and the 16-bit, 8-track stereo AD516 card are available from MicroPACE ☎ 0753 551 888 and White Knight ☎ 0992 714 539 for £1,249, while the cheaper *Studio 16* with 12-bit, 4-track mono AD1012 option costs £499.

HARD DRIVES FITTED AT HOME

A solution to the thorny problem of fitting hard drives to A600s and A1200s without invalidating their warranties has been announced by trade distributors ZCL.

The company have tied up a deal with ICL, the company contracted by Commodore to provided on-site maintenance, to provide an "at-home" fitting service, complete with a 12 month warranty. ICL will also extend the warranties by a further 12 months on the machines themselves. The offer is available from independent retailers, Calculus and Indi stores. Call ZCL ☎ 0543 414817 for details.

Cheaper Opalvision

Indi Direct Mail are selling the Opalvision graphics board at the lowest-ever price of £349.99.

Opalvision is a 24-bit graphics system providing up to 16.7 million colours on screen at once. It will work with the A1500, A2000, A3000 and A4000, fitting into a Zorro II or III slot.

Indi have also committed to offering people who've bought the board from them the forthcoming video modules at discount rates. These modules are expected to give Opalvision capabilities similar to that of the Video Toaster effects board (see page 14). Indi ☎ 0543 419999.

MORE ON YOUR DISK

You can now vastly increase the capacity of your hard drive with *Disk Expander*, a new utility being distributed by Micro-PACE UK and Power Computing.

Disk Expander works by a similar principle to that of *Stacker*, the famous PC program: it sits in the background, compressing files as they are saved to disk and de-compressing them as they are loaded back into memory. Space savings of between 30 and 70% are claimed to be typical. *Disk Expander* will work equally well on hard, floppy and RAM disks.

The program installs via Commodore's easy-to-use Installer utility, is operated via an "intuitive interface", and provides statistics on exactly how much space it is saving for you with each file processed. You can get the program to compress individual files, files grouped in directories, or entire disk volumes.

Disk Expander costs £39.99 and is available from Micro-PACE UK ☎ 0753 551888. Power Computing (☎ 0234 843388) are selling it for £30.

Stop thief

Protect your computer from thieves with the aid of a transfer from the Etching Transfer Company.

The company will place a small identification mark on the screen of your monitor – the mark can be a postcode for private users, or a logo for companies. The mark is impossible to remove without replacing the screen, making the equipment difficult for a thief to sell.

The transfers cost a minimum of £3 for three. Call the Etching Transfer Company on ☎ 0903 244642 for more details.

Commodore announce heavy financial loss

COMMODORE INTERNATIONAL LTD., parent company of Commodore UK, continue to lose money hand over fist. The company posted figures for the financial year ending 30 June, revealing that they had lost a total of $356 million.

The figures were announced on 12 November, but were expected to have been released back in August. One industry rumour put the delay down to Commodore hoping that their new CD^{32} console would gain a foot-hold before shareholders and creditors could panic.

The loss for the final quarter of the year was $83 million, following a loss of $177 million in the previous quarter (as reported in *Amiga Shopper* issue 28). Of the previous quarter's $177 million loss, $135 million was accounted for by write-downs of Commodore's assets (they were forced to re-evaluate a large stock of A600s before selling them at the new price of £199.99) and re-structuring, which was to make the company, in UK Managing Directory David Pleasance's words, "leaner and meaner". This leaves an operating loss of $42 million.

Of the final quarter's $83 million, around $30 million is said to be an operating loss, the rest again being put down to restructuring costs and inventory write-downs.

The result of all this is that shareholders' equity (the value of all shares) over the last year has dropped from $325 million to –$53 million.

Results were also posted for the first quarter, ending 30 September, of the company's current financial year: a loss of $9.7 million. This brought shareholders' equity down further to –$61 million.

The Chairman of Commodore International, Irving Gould, issued the following statement: "We have made progress in reducing the net loss. Having largely completed our operational restructuring, we are now planning to undertake a restructuring of our debts to allow the company to continue normal operations."

It was also revealed that Commodore were negotiating credit terms with some of their suppliers, who have restricted the company's credit and instituted legal action. Commodore have also failed to pay back two of their lenders according to agreements made. The loans amounted to $33 million, and Commodore are currently attempting to negotiate a waiver from the lenders so they can carry out their debt restructuring plans.

When asked to comment on these figures, Commodore UK's Colin Proudfoot, general manager of operations and finance, told *Amiga Shopper:* "What we're seeing is sales of A1200s picking up very strongly and CD^{32} taking off. Restructuring takes time and money. An operating loss of $9 million in the first quarter compared to $30 million in the previous quarter represents a big improvement. We're very confident for the future."

Commodore officials claim to be shipping some 22,000 CD^{32}s a week from their Philippines-based factory. The machine has recently been adopted by John Menzies, who are to stock it and its software in selected stores in their 274-store chain.

Commodore's confidence in the success of the A1200 and CD^{32} has done little to inspire confidence in one group of Amiga enthusiasts. They have banded together to form the Commodore Shareholders movement, and hope collectively to buy up enough Commodore shares to gain some measure of control over the company and put a stop to what they see as its mismanagement.

ROMBO'S VIDI FINALLY VENIT

Rombo's eagerly-awaited video digitisers, the Vidi Amiga (24) RT and Vidi Amiga (12) RT, are at last ready for release after long delays.

The more basic of the two, Vidi Amiga (12) RT, will digitise pictures with 12-bit colour accuracy in real time (that is, a maximum total of 4,096 colors). Monochrome images can be grabbed in 256 greyscales (but these are only displayable on AGA machines).

The accompanying software provides support for a variety of file formats, including those used on the Mac and PC. It has an image-processing section, providing a number of options including Edge Detect, Threshold, Negative, Light and Dark. Animation is supported via a module called the *Animation Workstation*. Vidi Amiga (12) RT costs £199, is comaptible with all Amigas, and is capable of being upgraged to the same specification as Rombo's other new digitiser, the Vidi Amiga (24) RT.

This high-end digitiser is capable of grabbing true-colour, 24-bit images in real time (that is to say, it is capable of distinguishing between 16.7 million different colours), and comes with the same software features as its 12-bit brother. It will take inputs from both SVHS/YC and Composite sources. The Vidi Amiga (24) RT costs £299.

For more details call Rombo ☎ 0506 414631.

Epson prices tumble

Epson, already leaders in the 9-pin and 24-pin dot matrix printer markets, aim to improve their standing still further by dropping the recommended retail prices of 11 of their printers.

The price changes are as follows. For Epson's 9-pin range: LX-400 down from £199 to £175, LX-100 from £222 to £187, LX-850+ from £269 to £257, LX-1050 from £398 to £346, FX-870 from £516 to £445, FX-1170 from £645 to £563.

The changes for the 24-pin printers are: LQ-100 down from £253 to £231, LQ-570+ from £398 to £375, LQ-1070+ from £622 to £551, LQ-870 from £704 to £692, LQ-1170 from £880 to £798.

Printer prices from dealers are notoriously lower than those set as recommended retail prices by the manufacturers, so remember to shop around if you're after a printer bargain. For more information call Epson ☎ 0442 61144.

VIDEO GROUNDS

Galaxy Grafix have released a range of background images, for use in multi-media presentations and video titling, called *Media Backgrounds*.

Each image in the three disk set is an overscanned, high-resolution 16-colour IFF file. Subjects include cameras, books, CDs, phones, textures, a keyboard, videos, and so on. The set costs £14.95 from Galaxy Grafix ☎ 0792 290998.

Software parties

In some circles, computer users sometimes have a reputation for not being very sociable, but 10 Out Of 10 Educational Systems (☎ 0742 780370) are looking for people to organise "software parties" to promote their educational packages.

The company will provide you with a party bundle and give you a minimum £5 commission on each sale you make. AS



The Amiga Shopper Shareware Collection volume VII

Here's the low-down on what you'll find on this issue's packed cover disk.

DICE

All Workbenches

DICE, or Dillon's Integrated C Environment, is generally accepted to be the most powerful shareware C development system around for the Amiga. It comes with not only a compiler and linker, but also a fully-featured text editor, giving you everything you need to start programming in C. It's also the compiler used by our programming expert Toby Simpson for his Sailing Through C column.

Unlike the other programs on our disk, *DICE* doesn't come with an icon which you can use to de-compress it. Instead, you need to use the Shell. *DICE* is stored on the cover disk as two separate archives, each to be de-compressed to its own floppy disk. Naturally, you can put *DICE* on to your hard disk if you have one.

Full instructions for de-compressing DICE and getting your system up and running are given in the cover-mounted book that comes free with this issue. In there you'll also find lots of example programs you can type in and try for yourself. Have a good read, experiment, and before long you'll be writing your own C programs.

DICE is the compiler used to test all of the programs in our Sailing Through C programming series, so you can compile all of these with it too. However, you cannot compile programs that make use of graphics library calls and the like without the addition of a set of files known as the Commodore Includes. You can obtain these direct from Commodore (send a cheque for £25, made payable to Commodore Business Machines (UK) Ltd, to Sharon McGuffie, Commodore Business Machines (UK), Commodore House, The Switchback, Gardener Road, Maidenhead, Berks. SL6 7XA, and ask for the Native Developer's Toolkit) or by paying the $50 shareware fee and registering *DICE*. (*DICE* is shareware, so if you intend to keep using it please do register – you'll find details on how to do this in the text file **register.doc**, which will be in the **docs** directory once you have de-compressed everything.). Better still, for £24.95 you can buy the full version of the *Complete Amiga C* book, which comes with the fully-registered version of DICE and the Commodore Includes, giving you with a complete, professional C environment. See the cover-mounted book for further details, or turn to page 74.



Roof Slate is a sample image taken from VideoWorld's Nexus Pro range of backgrounds for video work.

CSOURCE

All Workbenches

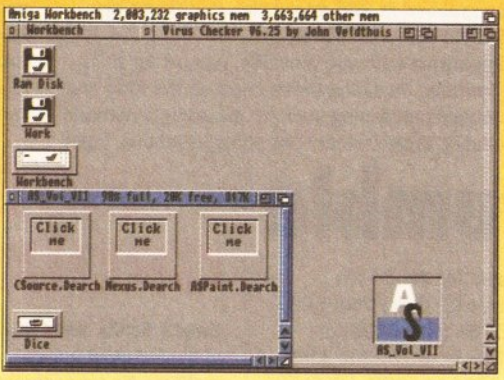
This archive contains the latest set of source code files to accompany our on-going C programming tutorial, Sailing Through C (see page 53). De-archive the files according to the procedure outlined below. You can then load them into a text editor such as *DME* (as supplied with *DICE*) to look at the source code. Please note that double-clicking on the files' icons will have no effect.

An executable version of the address book program, called **address.x**, will be present on the disk you decompress to. You can run this from the Shell by simply typing its name. Remember though to

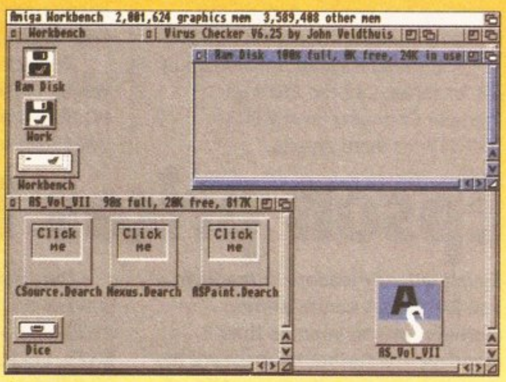
SO JUST HOW DO YOU GET AT ALL THIS

❶ First you should switch on and boot up your Amiga with Workbench. The programs on the disk have all been compressed, and must be de-compressed before they can be properly used. This process is pretty much automatic, so long as you follow the steps detailed here. (See the accompanying cover-mounted book for information on de-compressing *DICE*.) Before you go any further you need to decide where you want to de-compress the cover disk files to. If you have plenty of RAM, you may want to use the RAM disk. Another option is to de-compress to your hard disk. Alternatively, you'll need to de-compress on to floppy disk. If you choose this last option, then you'll need to have several blank floppies standing by. You can format floppies from the Workbench by single-clicking on their icon and then selecting the **Format Disk** or **Initialize** menu option (depending on the version of Workbench you are using).

Now insert the copy that you've made of this month's cover disk. You'll see the **Amiga Shopper** icon appear on the screen.



❷ The next step is to double-click with the left-hand mouse button on the **Amiga Shopper** icon. A window for the disk will then open, in which will be displayed the four icons for the software on the disk this month. Apart from *DICE*, the programs are all stored as archives and can be accessed via the icons shown in the window, whose filenames are terminated with the characters "**.Dearch**".



❸ Let's say that you want to de-compress the *Nexus* package. You'll need to decide where you want the de-compressed material to be stored. If it's on to a floppy, then insert the disk and open its window. If you want to place the files on to your hard disk or your RAM drive, then open their window instead. (Bear in mind that the contents of your RAM drive are lost when the power is switched off.)

VITAL: READ THIS FIRST

The first thing that you *must* do with your cover disk is to protect it from accidents by making sure that it is write-protected. To do this, make sure that the movable plastic tab on the disk is in the open position – that is, you can see through the hole. This means nothing can now be written to the disk, especially viruses. If you don't write-protect your disk and end up with a virus – well, that's your problem.

The next important step is to make a back-up copy of the cover disk – in case any nasty accidents happen while you're busy working with it. The easiest way to go about this is via the Shell. So, open a Shell window and then type the following at the prompt:

```
diskcopy df0: to df0:
```

Your Amiga will now ask you to insert the SOURCE disk (that's the cover disk) in **df0:** and then press the [Return] key to continue.

Your computer will now read some of the information from the disk before another System Requester window appears asking you to insert the DESTINATION disk (that's the empty disk you want to make a copy of the cover disk on). You'll find that you need to swap disks several times – a System Requester window will appear each time, prompting you to insert the appropriate disk.

If you have more than one floppy drive, you can of course copy from one drive to the other by using the following instruction:

```
diskcopy df0: to df1:
```

Right, now that you've made a copy of the cover disk, hide the original in a very safe place and work *only* with the duplicate.

CAN'T READ THE DISK?

We duplicate tens of thousands of disks, so inevitably a very small number will be corrupted – our copiers do carry out stringent quality-control tests, but the occasional duff disk will always sneak through. You'll know if this has happened to your cover disk because either you'll get a System Requester window appearing to tell you that you've not got a DOS disk sitting in your drive, or a System Requester will pop up to tell you just as unhelpfully that a READ ERROR has occurred while one of the programs was de-archiving.

The solution is straightforward. Just send the faulty disk to the address below, enclosing an envelope addressed to yourself for the return of your replacement disk – the padded variety are best – and we'll pay the return postage. The address is:

***Amiga Shopper* 33**
Discopy Labs
PO Box 21
Daventry NN11 5BU

With the disk please include a brief note saying what the problem is. Also mention what Amiga you're using and the version of Workbench that you are running. A replacement disk should then come rattling through your letterbox within a couple of weeks.

change directories to the one in which the program is contained: this directory also contains the database file used by the program, which cannot be found otherwise.

The source code for the address book program can be compiled with *DICE* (also included on this month's cover disk) although you will also need the Commodore Include files before you can create your own executable version (see the section above on *DICE* for details of this).

NEXUS

All Workbenches

In this archive you'll find a sample image from VideoWorld's *Nexus Pro* range of background pictures. It's a digitised image of roof slate, in 16 colours and an overscanned resolution of 704 x 566 pixels. Images such as these are ideal for use as, among other things, backdrops to video titles.

To view the image, you must first de-compress it according to the instructions in the box below and then load it into your favourite paint package/image-viewer, such as *Deluxe Paint* or *Art Department Professional*. The accompanying text document can be read by double-clicking on its icon.

The *Nexus Pro* range can be bought with images in both AGA and pre-AGA formats (like the sample provided here). We're reviewing it this issue, so turn to page 32 for our considered verdict.

ASPAINT

All Workbenches

ASPaint is an archive containing the source code to accompany our programming tutorial in our AMOS Action column. It is only of use to you if you own one of Europress Software's AMOS packages.

De-compress the archive according to the instructions given below. Having done that, you can load the resulting file (called **ASPaint.AMOS**) into AMOS (or AMOS Pro or Easy AMOS) and run it. If you own an AMOS compiler, you can compile the program first for extra speed. As you can see, the program is developing into a sophisticated package, with an extensive set of drawing commands already having been implemented. Study the source code in conjunction with the article beginning on page 101.

FAME AND EVERYTHING THAT GOES WITH IT

If you've got a program that you think will be of interest to *Amiga Shopper* readers, why not send it in? We're always on the look-out for good utilities or applications that could make the lives of other Amiga enthusiasts easier.

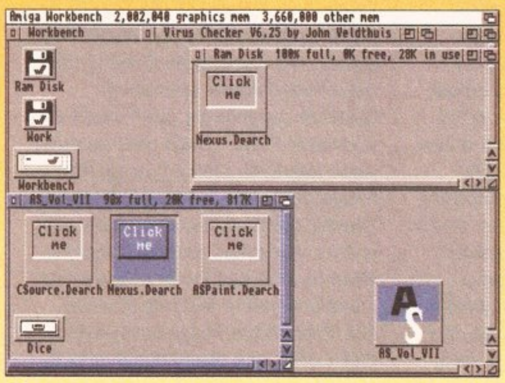
Your program needn't be particularly big or ambitious – just so long as it works and is useful. Then again, we wouldn't balk at a rival to *Deluxe Paint*, either.

Send your submissions to:

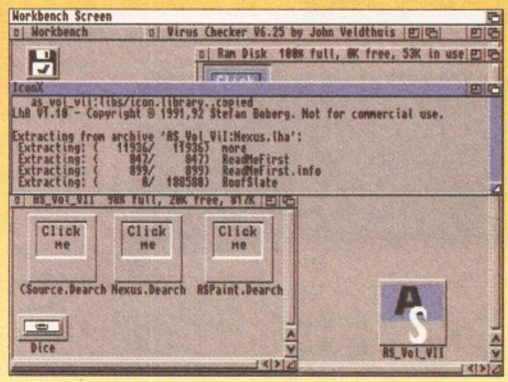
Cover Disk Submissions
Amiga Shopper
Future Publishing
30 Monmouth Street
Bath BA1 2BW

Please be patient waiting for a reply – we receive a lot of submissions, and like to evaluate them fully. AS

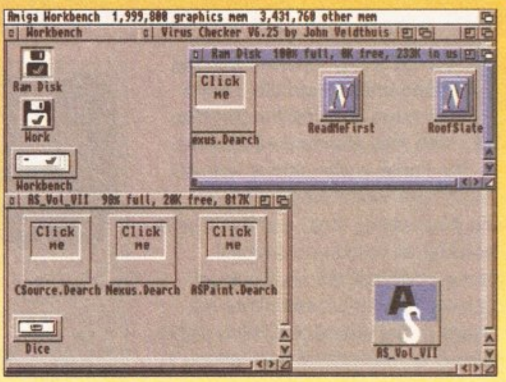
LOVELY SOFTWARE ON YOUR DISK?



❹ Drag the relevant icon (say **Nexus.Dearch**) into the destination window. (Drag an icon by putting the mouse pointer over it and keeping the left mouse-button pressed. Release the button when you've placed the icon where you want it.) Now double-click on it. The de-compressing procedure will automatically begin, and another window called **IconX** appears on-screen to tell you how it's going.



❺ In the **IconX** window will be listed all the files as they are extracted from the archive. If you are using an Amiga with only one disk drive then unfortunately you'll have to get involved with a fair bit of disk swapping. A System Requester window will appear each time you need to swap disks – simply put whichever disk is requested in the Amiga's drive. (Keep the source disk write-protected to be safe.)



❻ Once the **IconX** window has vanished the source window will still appear to contain only the **Nexus.Dearch** icon – that's because the window isn't automatically updated. Click first on the window's close gadget and then open the window again. It will reopen with the packages' icons displayed in their full glory. You can then run the programs or load the files as normal.

Another round of toast

NewTek have recently upgraded their legendary Video Toaster, making it more desirable than ever. Gary Whiteley drools and dreams of a PAL version...

The long-awaited Video Toaster 3.0 has finally become reality, and the hardware now fits not only the A1500/2000 Amigas but also the A3000 and A4000 models. But size is the not the issue here, for the best thing is that the Toaster software has been completely revamped (except for *ToasterPaint)* and lots of "hot new features" have been added which make me even more envious of my American counterparts in video, graphics and 3D production. Even owners of older Toasters can benefit, for the new software is also available as an upgrade *without* the Toaster hardware, though some of the new features (most notably 256,000-colour *Lightwave* anims and the "full" set of wipes) will not be available on non-AGA Amigas (that is, A2000 or A3000 models).

Long-standing readers will recall our UK exclusive on the original Toaster way back in *Amiga Shopper* 6. Since then two revisions of the software and one of the hardware have come and gone, but a PAL Toaster still hasn't materialised, even though it's two years since NewTek told us to expect one "within 18 months". Right now the only way for UK users to be able to use the Toaster in the way it was intended (as a video mixer with effects, framestores, grabber, keying, character generator, 3D software and more) is to use video standards converters, such as the Prime Image converter reviewed on this page. However, this is an expensive, and not particularly effective, option. In truth the only proper way to do PAL video with a Toaster would be with a PAL version of the Toaster.



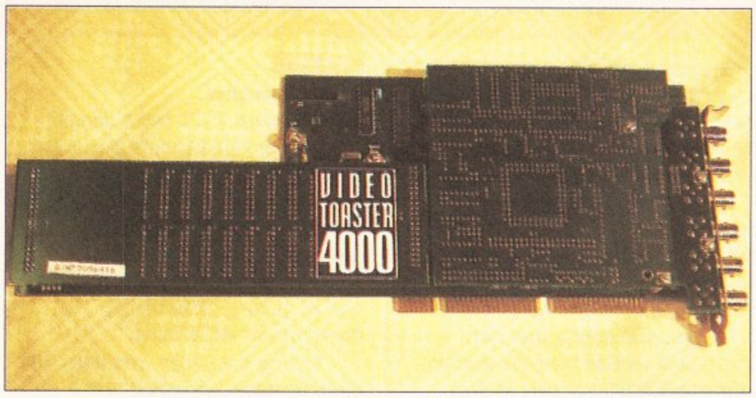
NewTek's Video Toaster 4000 screen. If you're involved in video effects work, at least in the NTSC-standard-based world, this should be a welcome sight...

SO WHAT'S NEW?

The most immediate changes can be seen in the Toaster's nerve centre – the Switcher. Better looking layout, and many more wipes and effects – nine banks of 32 effects each are available with the A4000 (that's 288 in total), seven with an A2000 or A3000 (making 224) – including



A single frame from a recent Todd Rundgren video produced using Lightwave and the Video Toaster.



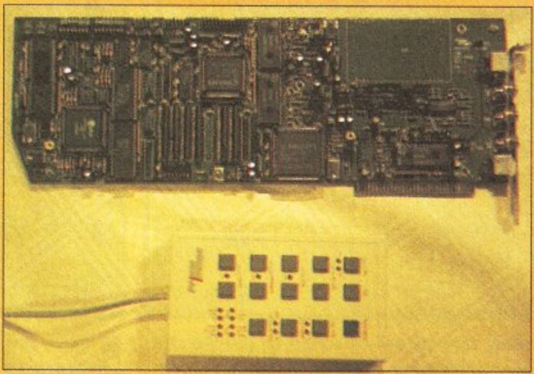
Video Toaster 4000 looks like the original but some hardware advances have been made. Owners of older Toasters can still use the new software though.

PRIME VIEWING?

It's not a PAL Toaster, but the Prime Image card has raised the hope of using the Toaster with PAL-standard equipment.

The Prime Image card is actually a TBC (Time Base Corrector), Proc Amp (Processing Amp) and Standards Converter all rolled into a single internal card that fits any Zorro (or PC) slot. As a TBC it smoothes out hiccups in the timing of a video signal (caused by mechanical fluctuations in the playback mechanism) as it is played back from videotape so the signal can be vision-mixed (switched, in US-speak) with another (TBC'd) off-tape signal. Time Base Correction involves replacing the existing synchronisation information of a video signal with a brand-new set of correct timings. Several cards can also be genlocked together.

As a Proc Amp it can make adjustments to the colour, phasing, sharpness and other features of a signal, and also perform Chroma Killing (that is, making the output monochrome by "killing" the colour information in the video signal). It can also transcode between composite and YC video, and it can "framestore" (Field or Frame).



The Prime Image StdCon/TBC and remote unit. That's standards converter and Time Base Corrector, that is.

Most importantly in this context, the Prime Image card can convert between PAL, PAL-M, NTSC, NTSC 4.43 and SECAM standards – meaning that it *can* be used to convert your PAL output to NTSC, which can then be fed to the Toaster. But that's not the end of the story by a long chalk.

You'll also need a *second* Prime Image card to convert the Toaster's NTSC output back into a usable PAL signal. And if you want to make full use of the Toaster's excellent Switcher capabilities, you'll need an additional Prime Image card for each video input you plan on using. An Amiga 4000 has four card slots, the Toaster takes up two (the video slot and its adjoining Zorro slot), leaving room for only two Prime Image cards – one channel in and one channel out. Each Prime Image card costs US$1,695, and the optional remote controls (one required for each card) cost US$285 each – and you'll need them if you want to use the cards to their maximum potential.

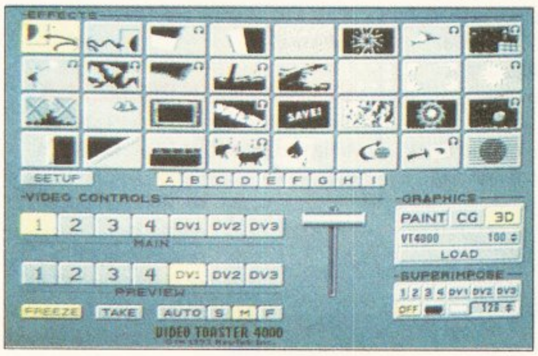
And for what? Let's face it, converting PAL (25 frames per second and 625 lines per frame) to NTSC (30 fps, 525 lines) requires some pretty



Just four examples (out of a range of 288!) illustrating the Toaster's video effects – though single frames can't truly do them the justice they deserve.

some memory-sucking but spectacular animated wipe effects with their own sound tracks (if you have an A4000). In fact some of these effects are so complex that the 6Mb A4000/030 I had on loan for the review actually refused to load them! Spaceship fly-throughs, soft-edged stars, flying logos – these are all part of the Toaster's new Switcher effects, which all seem somewhat faster than in version 2, even though the A4000/030 is probably slower than the accelerated A2000 in which I had a Toaster version 2.

Framestore loading is faster too, even from the A4000's slower IDE drive (slower than my SCSI drives, anyway) and keying also appears a little crisper. And a new option has been added to the Switcher's transition speeds, so in addition to the pre-set "Slow", "Medium" and "Fast" speeds, you can also define your own transition speeds.



The Switcher, heart of the Toaster, has been cleaned up and expanded to give you even more options, particularly when the Toaster's used with AGA Amigas.

3D HEAVEN

Lightwave 3D, the Toaster's 3D renderer, has again been widely improved and a whole set of new and exciting features has been added. *Bones* (a system for making inanimate objects bend, stretch and rotate very easily) is probably the most outstanding addition, though there are many others – including faster rendering, better lighting, new mapping techniques and much more.

Possibly the biggest bugbear (and one which could well put potential UK users off completely) is that *Lightwave's* rendering sizes are still preset to NTSC screen resolutions, so PAL users will require an image-processing program to scale the images to PAL sizes (probably losing quality in the process). If NewTek had allowed users to enter the screen sizes themselves (as several other 3D programs do) then *anything* might be possible. As it is, the choice is, unfortunately, dictated by the Toaster, not the user. Which is all fine and dandy for the average user in the US, but of little comfort to those of us chafing to use *Lightwave* for PAL work.

Modeler 3D, the Toaster's 3D modelling program, has also been substantially improved and, like many of the Toaster's other "modules", has been given a facelift to bring it more into line with the look and feel of Workbench 2 and 3 – cleaner and neater, with better buttons and easier-to-use selectors and menus. And lots of new (and useful) tools and functions have been added to make *Modeler* more powerful, yet easier to use: Boolean operations, spline curves, text

SYNC STRAINER

Another new product, from PreVue Technologies in the USA, is designed to enable you to use a multi-sync monitor (which *must* be capable of 15.7kHz operation) with an Amiga/Toaster set-up. It automatically adjusts the sync rates from the Amiga to meet the multisync's requirements, and is said to be all but transparent in use. Price was unknown at the time of writing but if you're curious PreVue can be contacted on ☎ 0101 916 477 2905 or Fax 0101 916 272 1528.

LIGHTRAVE

Warm & Fuzzy Logic (yes, that's really their name!) showed a US$499 device called LightRave at this year's World of Commodore show in Pasadena. LightRave is a serial port dongle and software combination which fools any Amiga into thinking it has Toaster hardware installed, thus making it theoretically possible for Toaster software such as *Lightwave* (and presumably *Modeler)* to run on *any* Amiga. There do seem to be some potential legal problems, and I'm led to believe that the dongle was itself quickly cracked, making a stand-alone version of *Lightwave* possible by simple pirating methods – so we may well see NewTek move to kill this product very quickly. It's worth noting too that all the other Toaster functions will not work without authentic Toaster hardware.

hefty compromises. What happens when 100 lines are dropped and where do the five extra frames come from? Immediately we're looking at some significant picture information juggling. And then the Toaster's NTSC output has to have five frames a second removed and 100 lines per frame added. From where – thin air? Of course not! Some frames and lines are inevitably going to be doubled up – or at least concocted out of existing lines and frames to look like new ones (which, of course, they aren't).

The result? A smooth PAL input becomes a jerky, somewhat degraded shadow of its former self, leaving me in no doubt why proper commercial standards converters can easily cost in excess of £10,000 each.

No disrespect to the Prime Image card – it's an impressive TBC/Proc Amp/standards converter for NTSC work – but having to carry the can for making PAL Video Toasting possible seems a little harsh. Standards conversion is not the answer. A full-spec PAL Video Toaster is. And the sooner this happens the better. Why should America have all the fun? A PAL Toaster would certainly sell by the van load!

The Toaster 4000 is *awesome* (well, everything except *ToasterPaint,* which is still pretty awful) and I want one. But I'm sure as hell not going to buy a kludged-up system which has to rely on over $5,000-worth of standards conversion cards to get some kind of PAL output.

SHOPPING LIST

Prime Image StdCon/TBC..............................US$1,695 plus $285 for optional remote control
By: Prime Broadcast Equipment
☎ 0101 408 867 6519
Available from
Micro-PACE UK Ltd
☎ 0753 551888
or Vortex ☎ 081 579 7105.
Call for UK prices.

CHECKOUT
PRIME IMAGE

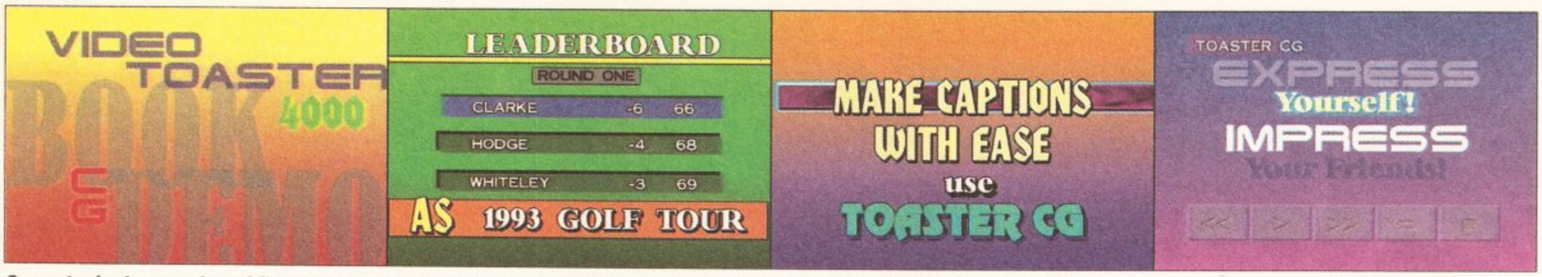
Quality ●●●●●●○○○○
Good, as far as cost vs quality and features is concerned, but in the context of converting moving PAL images into Toaster fodder and then back again the answer has to be that these cards sadly do not cut the mustard.

Documentation ??????????
None supplied with review copy.

Ease of Use ●●●●●●●○○○
Not difficult to use if you have the remote control; otherwise it's down to setting DIP switches on the card itself and then just plugging up the video kit.

Value for Money ●●●●●●●○○○
Relatively cheap as far as standards converters go, but expensive where PAL Toasting is concerned.

Overall rating ●●●●●●○○○○
I don't want to imply that the Prime Image is a bad device (it isn't), it's just not really suited to having to convert PAL-NTSC-PAL, which is what PAL Video Toasting requires. One way is fine, both ways is just too much.



Some typical examples of ToasterCG work. The Character Generator now even comes with around 280 PostScript fonts – what more could you ask for?

importation, drilling, tapering, bevelling, and displacement mapping, which uses a bitmap image to actually move (or displace) points in an object (unlike bump mapping, which only makes an object *appear* bumpy).

REFORMED CHARACTERS

ToasterCG (Character Generator) has also had a radical spring clean, and it has become much easier to use and far more flexible, now incorporating on-the-fly PostScript font import and scaling – meaning that a wealth of fonts is now easily available. NewTek even provide around 17Mb of PostScript fonts to get you started – that's around 280 great fonts to use as you wish.

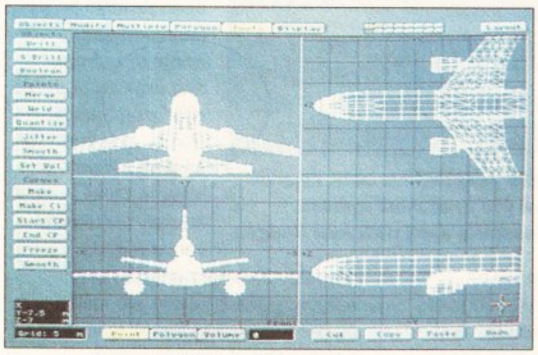
I must say I was very impressed at the way *ToasterCG* could scroll 300-line text smoothly across the screen, and pleased at the new control the user is given when it comes to layouts – letters can now be selected individually and changed in style, colour or size, or any combination of these, very easily. Colours and sizes can be mixed on lines and justification is quickly achieved, making *ToasterCG* the program it always should have been.

ChromaFX, the Toaster's filtering system which can do live coloration effects on incoming video images, has not been updated this time around, and though some of the effects are very spectacular indeed, I have to admit that I'm still a little intimidated by its workings and it hasn't been made any more accessible.

And so to *ToasterPaint,* the black sheep of an otherwise outstanding collection. Why *ToasterPaint* remains so neglected is beyond me. It never was the best of paint programs even when it was new, and three years later it looks (and feels) positively dull. As a *DigiPaint* clone it never really shaped up to the requirements of a 24-bit program, yet the opportunity to improve it has been consistently ignored. I hope this changes soon, because it really does let down the rest of the side.

THE SCREAMER

You might have heard that NewTek are planning to release something called The Screamer around the time you'll be reading this. But in case you don't know what I'm talking about, here's a reminder: The Screamer is a dedicated RISC-based rendering engine for *Lightwave*, running at up to 600MIPS – which is enough to render *Lightwave* animations *in real time!* And although you might think US$10,000 is a lot to pay for such power, go and check out the competition – you'll then realise just what a bargain it is for the professional CG animator. The rest of us, however, will just have to make do with its rumoured lesser-powered relatives.



A much-improved Modeler 3D now sports lots more powerful functions, including Boolean operations, spline curves, bevelling, tapering and heaps more.

AS FOR INSTALLATION...

The biggest drawback with the current software is that it comes on 45 disks (29 normal-density disks for non-AGA machines plus an additional 16 high-density disks for AGA Amigas) and you don't get any choice as to which parts of it you wish to install. It's a case of all or nothing. You can, of course, delete items you don't require after installation (such as the demo images and animations – the AGA animations alone require over 17Mb) – but you can't restore at will from the original disks unless you load the whole lot in again! So make sure you've got a tape streamer or other mega-backup device handy if you want to chop and change the Toaster software!

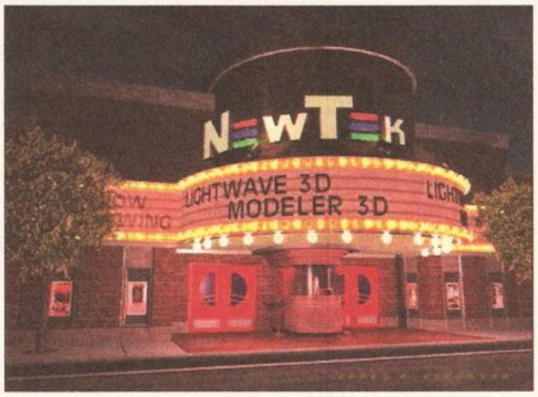
SYSTEM REQUIREMENTS

The Toaster requires a well-charged Amiga to give of its best. It *will* run without an accelerator, but an '030 or '040-equipped Amiga is recommended, as is at least 9 or 10Mb of RAM (18Mb recommended on the Amiga 4000). Loads of hard disk space is also required – 200Mb is probably enough to get you *seriously* started (the Toaster software alone requires about 120Mb on an A4000 installation, and around 90Mb on other machines).

You'll also need a standard RGB monitor such as a Commodore 1084, because the Toaster takes some of its synchronising information from the monitor, or a Sync Strainer if you are using a multisync.

If you want to use PAL video sources you'll need a standards converter and Time Base Corrector for each source and another for the output (see the Prime Image review on page 14). Plus monitors, cameras, videotape recorders, and all the usual video accessories.

If you just want to use *Lightwave* then you'll need either an NTSC-capable monitor (that's at 3.58MHz, not 4.43MHz – unless you have a standards converter you'll only get monochrome output) or a PAL monitor and standards converter. AS



A great example of Lightwave and Modeler's combined modelling and rendering capabilities. Great, even if you never used the rest of the Toaster's features...

Gary Whiteley can be contacted by e-mail as drgaz@cix.compulink.co.uk

SHOPPING LIST

Video Toaster 4000........US$2,395
By NewTek Inc., 215 E. 8th Street, Topeka, Kansas KS66603, USA.
☎ 0101 913 231 0100.
Fax: 0101 913 213 0101
Supplied by MicroPACE UK Ltd
☎ 0753 551888.

CHECKOUT Toaster 4000

Features
●●●●●●●●●○
What can you say? As the heart of a video post-production system, the Toaster does most of the things the average (and not-so-average) video producer requires. There are a number of extras I could think of (compositing, image-processing, sound mixing), but what the heck! At $2,395 the Toaster is still a steal.

Documentation
●●●●●●●○○○
Very substantial, but would need to be twice as thick to cover all areas fully, even though it already contains loads of good tutorials and information.

Ease of Use
●●●●●●●●○○
Depends which parts you're using (the 3D side can be quite daunting) but on average the Toaster is quite straightforward to use.

Value for Money
●●○○○○○○○○
If I were in the US I'd have to say that the Toaster really is a bargain – at least when you compare like for like. In the UK, considering the extra cost of getting around the PAL incompatibility, it remains an expensive luxury.

Overall rating
●●●●●●●●○○
I love the Toaster – it's a brilliant idea, well executed and getting better all the time. If I lived in the US it would be great to have one (or more) to use in my video productions. Elsewhere (that is, the greater part of the non-NTSC world) a complete Video Toaster is about as much use to the well-heeled videomaker as a chocolate fireplace – though specialists will still find a lot to drool over in the 3D features.

Video dream machine

FrameStore – no, not a shop that frames pictures but another "real-time" digitiser from Germany. Gary Whiteley gets the picture.

It seems like only a couple of issues ago that we reviewed FrameMachine, Electronic Design's real-time digitising card for Amigas with Zorro slots. But that's because it was. *(Amiga Shopper* 31, in fact – order it on page 106 if you missed it.) Now they've produced an external real-time digitiser suitable for use with *any* Amiga (including the A1000 if a suitable adaptor is used).

Called FrameStore, the hardware comes in a sturdy plastic case identical to the ones that contain the company's PAL and YC genlocks. It has both YC and composite video inputs, an external power socket (German-style 2-pin PSU supplied) and an on/off switch on the front. Connection is made to the Amiga via a generously long cable to the parallel port.

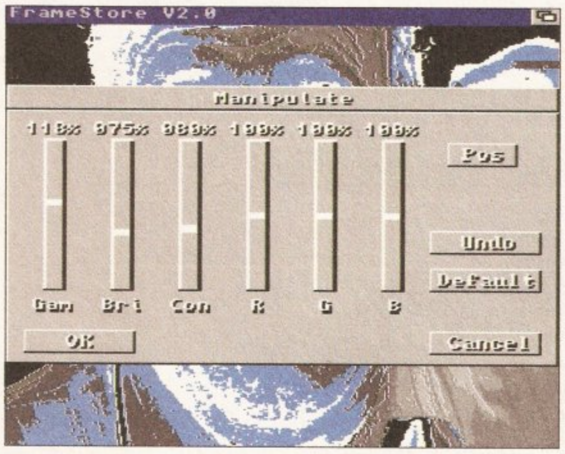
Before use you'll have to load up some software, though if you have a hard disk you can easily install it there. You'll also need to make a few settings to tell FrameStore whether your video source is PAL or NTSC (it can accept either), whether it is from VCR or camera, and if you would like to use overscan.

Next you set up your shot using the Preview feature, which enables you to see the incoming images in black and white in full-screen low or medium resolution. Unfortunately, Preview doesn't update very fast, so users wishing to accurately freeze on specific frames of an incoming video may well experience some difficulties. The frame is captured when the left mouse button is pressed, after which conversion from FrameStore's native YUVN format (as used in TV systems) can begin.

I grabbed images from a variety of video sources (including PAL YC and composite and NTSC composite) and I was impressed with the quality of the images I was able to grab, though I must admit to being fortunate enough to have a 24-bit card on which to display them in all their glory. Mind you, AGA users will be pretty chuffed too, and even 16-colour dithered hi-res images looked quite acceptable. All the grabs of video wipes in the Video Toaster update (see page 14) were made using FrameStore directly with the Toaster's Program output. AS



You don't need a spare Zorro slot to use FrameStore – any Amiga will do!



It may not have the most spectacular-looking software, but FrameStore is still quite easy to use.



Given suitable video signals, Electronic Design's FrameStore can provide excellent quality grabs.

Requirements

Any Amiga with at least 512K of RAM (though more is required for all modes and screen sizes), and at least AmigaDOS 1.2. An accelerated Amiga, a hard drive and a 24-bit display card are helpful, but not obligatory. Some form of video feed is also required.

SHOPPING LIST

FrameStore £379.95
By Electronic Design
From Micro-PACE UK Ltd,
Unit 10, Perth Trading Estate,
Perth Avenue,
Slough SL1 4XX, Berks.
☎ 0753 551888.

CHECKOUT FrameStore

Quality
●●●●●●●●●○
Excellent quality grabbing (if the input is up to scratch).

Documentation
●●●●●●○○○○
Another fine mess of Anglo-German translation, especially the disk-based help files. Lucky they're not vital...

Ease of Use
●●●●●●●●○○
Provided all your connections go well, it's quite easy to get to grips with, and the software is pretty obvious to use.

Speed
●●●●●●●○○○
It's not the fastest "real-time" digitiser around, but it gets the job done very well, though not as expertly as MacroSystem's VLab, its obvious competitor.

Flexibility
●●●●●●●●○○
Digitise both PAL and NTSC video, save in 24-bit, YUVN, RGB8 and E-Design's own EDAN format, plus all the current IFF modes, including AGA. Also features colour and other corrections and some limited control over size.

Value for Money
●●●●●●○○○○
Not particularly cheap, especially when compared to the VLab range.

Overall rating
●●●●●●●●○○
High-quality grabbing at a relatively high cost, and with less extensive software and functions than VLab. But certainly a digitiser worth taking a closer look at.

GOING A BUNDLE

There are a couple of surprising extras provided free with the FrameStore. The first is ASDG's *Art Department (TAD)*, which is a forerunner of *Art Department Professional (ADPro)* and can be used for image processing and picture conversions – though it lacks AGA support and many of the nice features that *ADPro* now boasts. There's also a trade-up deal. The second extra is *Scala 1.13* (AKA *VT*) – well worth getting for free, even if, like *TAD*, it is now getting a touch long in the tooth.

BEGINNERS BEGINNERS START HERE BEGINNERS

There are two kinds of digitiser, generally termed "slow scan" or "fast scan". Slow scan digitisers are those which require the incoming video signal to be frozen or completely still, because they capture an image directly from the video signal, a strip at a time. Any movement of the video will show up in the grab as blurring, jitters or flickering. Examples of slow scan digitisers are Rombo's Vidi-Amiga 12 and NewTek's DigiView.

Fast scan digitisers, such as VLab, ColourPic and FrameStore, are the "real-time" ones, though this usually only means that the digitiser can capture a complete frame of video *into memory* in the time it takes to be displayed (that is, one 25th of a second in PAL or one 30th in NTSC). This memory is special video memory built into the digitiser. The image is held here as long as needed, allowing you to grab from it any number of times and manipulate the resulting image without fear of not being able to capture the frame again. "Real-time" digitisers however usually take a while to process the grabbed image into something the Amiga can use – typically a minute or so (depending on the grab size and the Amiga's speed).

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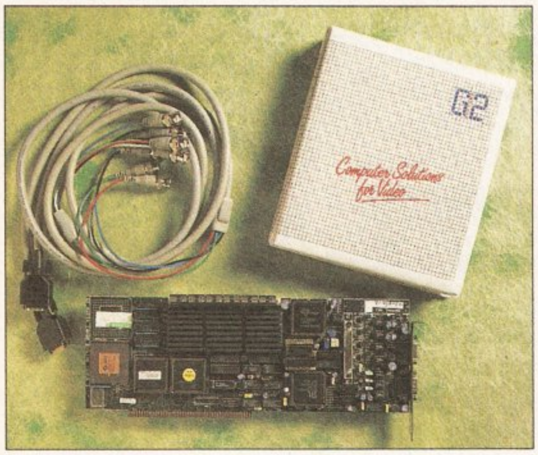
ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE. E&OE. ALL TRADEMARKS ACKNOWLEDGED.

The perfect paintbrush?

There's a fair choice when it comes to 24-bit graphics cards. Pat McDonald checks out the latest and greatest 32-bit board from G2, Image Engine.

This is a 32-bit Zorro 3 graphics card, one of the most expensive expansions currently available for the Amiga. It requires either an A3000 or A4000 with 12Mb of Fast RAM and 2Mb of Chip RAM – you can squeeze by with 8Mb of Fast but I wouldn't recommend it.

Image Engine has two halves. The first is the hardware: a best-quality RGB framegrabber with separated sync input, 24-bit framebuffer, 8-bit alpha channel and broadcast-quality encoder. The second half is the software. It's called *Imagica*, and it's a set of simple (and not so simple) graphics paintbrush controls – see the box below for the full lowdown.



The Image Engine: 32-bit graphics, but only for top-end Amigas – and it'll cost you. You'd better believe it.

Graphics display cards have a broadly similar design. They've got a memory store for the digital picture information, some finely-designed video circuits to pump out a broadcast-quality signal, and a control processor or two to make the whole thing go. One feature unique to this card is a non-volatile graphics store. You're busy on a graphic and there's a power cut or crash. Other cards forget their contents; with this one, just get power back and run *Imagica* again, and your graphics are unchanged. That one feature alone is pretty impressive for those whose time is precious.

The output is 768 x 576 pixels as a default, at 15KHz. In other words, broadcast quality – G2 are very careful about calibrating their units. At the top end of the board, near the 9-pin input/output connectors, you can see the RGB and sync test points. But high specification isn't the only reason that the Image Engine costs so much.

At the other end of the board is the graphics processor – a Texas Instruments 340 DSP. I could blather on about what this chip can do, but it would be a bit irrelevant because a large number of *Imagica's* functions are handled by the Amiga processor, not the TI chip. As G2 keep developing Imagica, more operations will be done by the 340, resulting in much faster operation.

Not that Image Engine is a slouch at the minute. Sure, on 25MHz 68030 machines it takes a couple of seconds to bring up a menu. But when you're actually manipulating a brush, carefully retouching some graphics, you've got a precise tool that works just right.

So it's fast right now, and will get faster as time passes. G2 still haven't recovered anywhere near their development costs, so I think the price will stay as it is for quite some time.

WHAT YOU GET

As standard, G2 supply the board, one lead for output and another for input, a manual and a disk containing the *Imagica* software and a **Harlequin.library** file. Aha, Image Engine is Harlequin compatible! Time to get some quotes in.

Martin Lowe, of Amiga Centre Scotland, the authority when it comes to Active Circuits' Harlequin, had this to say: "I look on the appearance of Harlequin-compatible boards as an accolade to the best system, rather than a basis to sue for hundreds of thousands of pounds. At the moment, Harlequin is Grafexa-compatible, which is a stepping stone in between what we have now and RTG".

Erm, what's RTG?

"Re-targettable Graphics. In other words, a standard to let Workbench programs display on any platform, be it built into the machine or a separate graphics cards. CBM have stated that it will be launched alongside the AAA chipset sometime in 1994".

How Harlequin-compatible is the Image Engine? Not totally, as Dudley Bradfield of G2 explained. "When we say it's Harlequin-compatible, we mean it will work fine with all the support software that you get with a Harlequin. It won't necessarily work with all third-party Harlequin software". It certainly doesn't work with Amiga Centre Scotland's Single Frame Controller (see page 29).

G2 must still be very proud of

IMAGICA: THE BEST AMIGA COMPOSITING SOFTWARE

Want to take elements from two or more different images, and mix them around? Of course you do – image-compositing is a way of taking existing material and making something new with all the pieces. It's not a new technique – Monty Python were doing it years before the word "computer" came into common usage.

Imagica makes the whole process much more precise, and is at the other end of the quality spectrum. Existing Harlequin users can buy *Imagica* for use with their graphics cards, although it isn't as fast on a Harlequin as on an Image Engine, and £700 is a lot for a manual and a disk. G2 were thinking of doing an AGA version of *Imagica*, but with the release of *Brilliance* they have decided not to bother. (For the low-down on *Brilliance*, see *Amiga Shopper* 32 – and turn to page 106 to order a back issue if you missed it.)

Image-compositing is great fun for everyone – you certainly don't need to be an artist. But, professional, television compositing is certainly a specialist market. I can see why G2 don't want to get involved with competing in the low-price arena.

This is what *Imagica* has to offer.

❶ Basic drawing. *Imagica* powers up showing the contents of its image buffers – two rectangles, black and white. To get the menu to come down, just whip the mouse to the top of the screen. Pulling it down below the menu removes it again. *Imagica* supports the usual point, line, box, polygons and circles, but the brush is the main drawing tool.

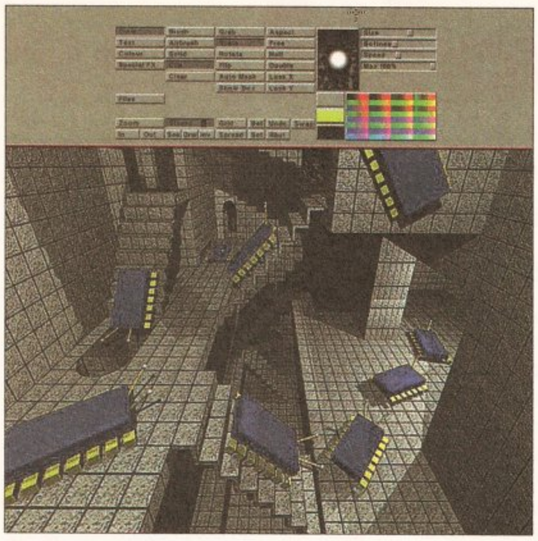
❷ Everybody knows that interlaced graphics flicker on a 15kHz monitor. If you haven't got anything better (though if you can afford Image Engine, why not?), all you do once you have digitised your graphics is select the solid filter, and Shazam! Interfield jitter is removed (although the picture is slightly blurred as a result).

❸ The heart of the whole system is the fine brush control, displayed on all menus. The size, subtlety and speed can all be finely controlled via sliders. Of course, custom brushes can be chopped out of the screen, and distorted to your heart's content. That's what makes *Imagica* the perfect paintbrush!

❹ Want some words slapped on your picture? The software will happily load all bitmap and Compugraphic fonts, and print them with a brush texture (it may be a two-step operation, but it does it) and even supports a cutesy feature to alter the exact slope of your italics.

❺ Have you noticed the percentage colour bars? (That's them in the bottom right of the *Imagica* control screen opposite.) Well, if you want to use a precise 256 rating, then you may notice that this colour bar is exactly 256 pixels long. The colour mixer isn't illustrated – imagine a box with four corners. Put a colour in each corner, and the intermediate tones are displayed. Quicker and more precise than mixing colours on a palette, although less aesthetically pleasing.

❻ Special FX deals with digitising (displayed here) and stencil work. Black levels can be tweaked precisely, and the board can lock to an external sync source even if it isn't digitising. You can just hit <F1> and <F2> on the keyboard to stop your picture from jumping.



This composite screenshot shows Imagica in action, modifying a cover image from a recent Amiga Shopper.

the Image Engine though, because they've built a dongle onto the board. Only the supplied version of *Imagica* will load on a particular board. They could have gone the whole hog and put *Imagica* on a chip on the board, but that would have made upgrades even more expensive.

One feature that they decided not to use is an ICD connector. G2 designed a transcoder on a board, which could translate composite video and S-VHS signals into RGB for digitising. The trouble is that if you feed such a relatively poor signal into the digitiser, it doesn't really show off how good it is. So they kept Image Engine high-end instead.

It could be a bit of a problem, because there are quite a few studios where RGB video is not used. It means only those with the best quality equipment can even contemplate getting an Image Engine, although of course if you have your own broadcast-quality transcoders then you'll be laughing. If you can't feed it RGB output from a video source, then Image Engine can't digitise anything.

The manual is a hugely unsatisfying book, basically a list of the *Imagica* controls and a few "how to" pages. However, the nature of *Imagica* is such that you only use it for occasional reference when you're learning your way around – much more fun than wading through page after page of waffle.

One thing that isn't in the manual (and should be) is how to actually fit the board into an Amiga. Official post-review advice from G2: do *not* try to mount the board in the bottom slot of your machine, because the weight of the custom hardware chips causes the board to flex, which can cause short circuits.

That's exactly what happened with my A3000. An overlong pin on a capacitor shorted on the case, which killed the 340 processor. Mind you, I was using an ex-demonstration board which wasn't of the same build quality as a production unit. In typical computer journalism style, they'd sold it to someone before I'd finished. But then it took Dudley about ten minutes to fix.

Remember, Image Engine doesn't fit in the video slot. That means you either need two monitors (one for the Amiga and one for the card) or a switcher box to switch inputs to one monitor. *Imagica* will multitask, but it requires such huge amounts of RAM that you shouldn't expect anything chunky to run.



The top half of Annie Lennox has been given a quick colourised suntan. Took me about a minute to do freehand. Had I used a rectangle command it would have been about four seconds. Easy isn't the word!

AND THE KITCHEN SINK

Once you've got it all connected and start loading 24-bit images, one thing is immediately apparent – your monitor picture is dark. That's because the board is working properly and not producing a hot signal like the Amiga. A quick twiddle and up comes the brightness.

Digitising a grab (you can preview the picture through the board) takes about a second. After that, you can start taking graphics from one image and transferring them to the other. You can do graphic rub-throughs, colourise areas to change the colours while leaving greyscale levels the same, and generally chop and change to your heart's content.



This is exactly the sort of thing that Image Engine does best – montage graphics into one picture.

And you enjoy it. After a few difficult minutes finding out how an option works, you appreciate the vast range of possibilities without ever rendering a computer model again.

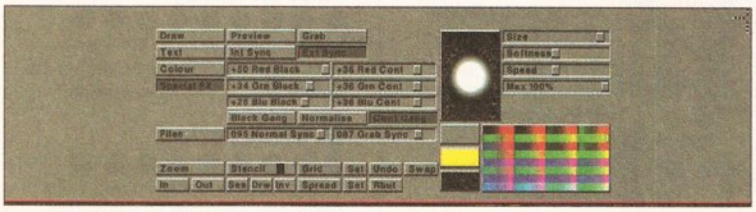
What makes it such fun is the brush controls. I don't just mean the display affecting brush operation – they're good, but nothing special. What is special is that you hold down the left mouse button to achieve the effect. Or hold down the right mouse button to remove it. Simple. No more clicking on **Undo**, no more cursing after you accidentally remove some important detail. It can be very difficult to remove artists from an Image Engine once they have access to such a simple way of removing mistakes.

Although it takes minutes to get acquainted, it takes a week or so to get really comfortable with the system. You start off by thinking, "Hmm, what should I try?" After a while you know when an image needs a little blue removed or why something won't quite fit.

C'mon, Pat, there must be something missing. Well, *Imagica* can't do anything with perspective – it's strictly flat-earth territory. But it can rescale and reshape brushes up or down in size very well indeed. And... no, I really can't think of anything else that's missing.

However, this is not a paint program. It's a tool for professional graphics artists. Okay, any Amiga owner can start to get into 24-bit. Nowadays, there's a fair range of 24-bit IFF compatible software, for producing top quality graphics on the Amiga. Not just the expensive stuff like *ADPro* and *Morph Plus* – more and more cheaper stuff (and even shareware like *Digital Illusions* and *Rend24*) give some access to professional video quality graphics.

The trouble is that you still have to pay for a 24-bit display to actually see the things. A cheap one like Opalvision costs about £600. A Harlequin with an S-VHS VLab is more like £1,500. The Image Engine's digitiser, frankly, blows that out of the water – it's every bit as good as the full Harlequin's. With *Imagica* for free, you'd be a bit silly to buy them separately. Or else you really do need a fully compatible Harlequin card and are prepared to pay the difference. AS



Imagica offers brilliant image-compositing features, but no Undo button – a left mouse button click applies an effect, and a right button click removes it.

SHOPPING LIST

Image Engine 24-bit RGB digitiser and 32-bit display £1,995
(Harlequin *Imagica* software separately ....£695)
From: G2 Systems,
5 Mead Lane, Farnham,
Surrey GU9 7DY
☎ 0252 737151

CHECKOUT IMAGE ENGINE

Quality
●●●●●●●●●●
You want the best, you got it.

Documentation
●●●●●●●●○○
Deliberately sparse – but mostly unnecessary, thanks to the straightforward nature of the product.

Ease of Use
●●●●●●●●●●
You learn by experimenting with it.

Performance
●●●●●●●●○○
Will get better as more functions are executed using the graphics processor.

Value for Money
●●●●●●●○○○
Quality like this costs a full set of limbs.

Overall rating
●●●●●●●●○○
The best there is – and the price reflects it.

A grand grabber

Rombo's new Vidi-Amiga-12 AGA enables you to grab images from any video source, in AGA modes if your Amiga can handle it. Steve McGill plugs in...

The popular Vidi-Amiga not only offered high-quality grabs, it was cheap (£100) and easy to use – just plug it into your Amiga, boot up the supplied software and connect to a video source – camera, VCR, laserdisc, whatever it was.

The unit plugged directly into the parallel port, the only problem being that the awkward shape blocked off the serial port. Unless you never used the serial port, the constant unplugging of the Vidi unit was tiresome and caused unnecessary wear. Unfortunately, the problem hasn't been redressed with the Vidi-Amiga-12. Rombo offer to sell you a connector to end this inconvenience, so why couldn't they either box the unit in a thinner case or supply it with a ready-fitted ribbon?

That apart, the Vidi-Amiga-12 AGA is a step forward. The software interface is much friendlier and more logically laid out than the software of old. The grab preferences and display preferences sections enable you to define the various resolutions and types of grabs you want to take – colour, mono, red, green, or blue. The grabbing panel is easy to use – brightness, contrast and saturation settings are software-controlled – and the Mix control panel offers a plethora of manipulative delights.



Vidi-Amiga-12 AGA's main control screen is much friendlier and more logical than the earlier version's.



This image was grabbed from an S-VHS camcorder and saved in interlace format, all in Vidi-Amiga-12 AGA...

Reading the advertising blurb, you could be forgiven for thinking that the unit will grab frames in any resolution – it says Overscan/Hi-Res, HAM-8 and numerous other grab types are available. But the unit can only grab 16 grey scale shades live or 4,096 colours (HAM) at a maximum resolution of 320 x 512 (Lo-res interlace) in less than a second. The clever part of the Mix panel is that it enables the grabs you have taken be remixed and displayed in a multitude of different resolutions and numbers of colours.

Sequences of frames are now saved as Anim files – great for rotoscoped animations. The mixer can turn a full-colour grab into a 256-colour or 256-greyscale image (provided that you have an AGA machine, that is), which can be saved in various formats that can be read in by other machines – 24-bit IFF, BMP (24-bit PC format), 12-bit and TIF. *Art Department Professional* offers more out-and-out power, but this conversion ability is nothing short of fabulous, though you need an AGA machine for 256-colour and mono conversions, Hi-res interlace HAM and HAM-8 display, among others.

Image-processing is also catered for. It doesn't offer the range of options that say *Pixmate* and *ADPro* are capable of, but you can batch process Carousel selected images, and there are Edge Detect, Threshold, Negative, Light and Dark options. The ability to tweak the parameters of these options would have been a nice touch, but you can't have everything. The software will multi-task but does not have an ARexx interface – a shame.

So how well does the unit perform? To put it through its paces, we connected it to a Panasonic MS95B Super-VHS camcorder. The Vidi unit has an S-connector, which means that it can process the higher bandwidth signal that this type of camcorder outputs.

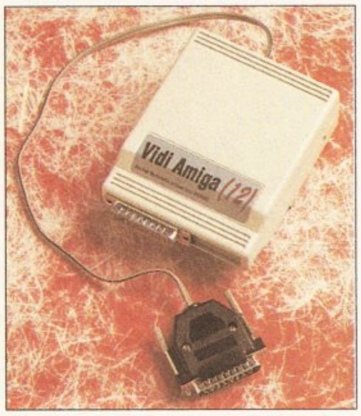
Image quality was impressive. The real test with a unit like this is how well it will reproduce skin tones, and the results were admirable – they looked natural and lifelike. There is a marked drop in image quality between Super-VHS and standard VHS. The old adage of "garbage in equals garbage out" holds true. Nevertheless, although the S-VHS grabs were the show stealers, the VHS grabs held their own. Degradation does occur when grabbing from moving tape, but this isn't due to the Vidi unit, it's an in-built problem with the medium of videotape. Again though, the S-VHS tape grabs were markedly superior to the standard VHS grabs.

There are some nice little touches in the manual explaining the basics of good grabs; VCRs on Pause are not a good idea for colour grabs. Lighting is probably the single most important consideration for agreeable results.



The same image, in VHS and low-res, demonstrating the broad range of the Vidi-Amiga-12's capabilities.

All in all, the Vidi-Amiga-12 is a quantum leap up the evolutionary ladder of affordable home frame-grabbing. It could be considered a foundation product – that is, you can build an excellent digitising system round it and it will grow with you. From the humble Workbench 1.3 A500 to the mighty A4000, the Vidi performs faultlessly. Whether you're a desktop animator, desktop videographer, desktop publisher or desktop graphic designer, the Vidi-12 has something to offer you. It has to be one of the most exciting creativity-enhancing tools currently available for the digital desktop artist. AS



Just plug in the Vidi-Amiga-12 AGA and you can grab grandly...

SHOPPING LIST

Vidi-Amiga-12 AGA £99.95
From: Rombo Productions, 2 Baird Road, Kirkton Campus, Livingston, Scotland EH54 7AZ.
☎ 0506 414631

CHECKOUT
Vidi-Amiga-12 AGA

Features
●●●●●●●●○○
In such an inexpensive unit, the inclusion of an S-Connector, image processing and multi-tasking software is nothing short of excellent.

Documentation
●●●●●●●●○○
Much better than efforts of old from Rombo – less arrogant, more informative, with useful tutorial and glossary sections.

Ease of Use
●●●●●●●●●○
It's plug in and go really. Best to familiarise yourself with the software.

Value for Money
●●●●●●●●●○
Nothing comes close to offering so much for so little. Would be perfect if a parallel ribbon cable were provided.

Overall rating
●●●●●●●●●○
Unless you intend working with 24-bit colour, the Vidi-Amiga-12 will be with you for years.

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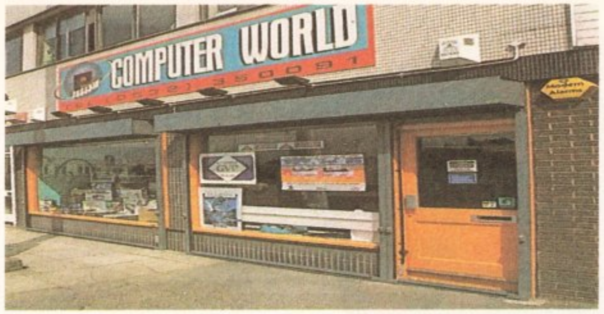
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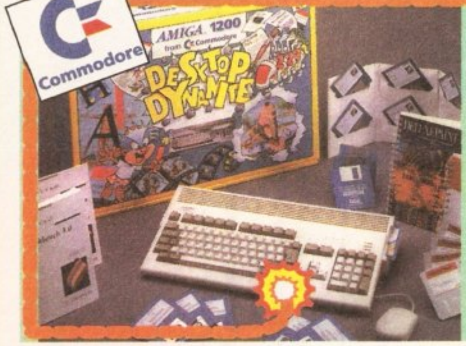
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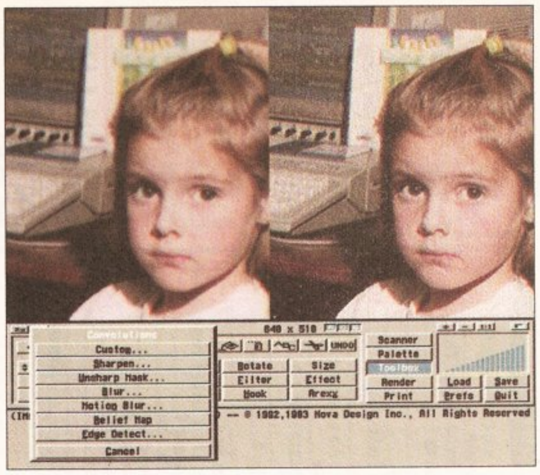
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Very special FX

Jeff Walker samples the latest version of a classic image-processing program, ImageFX.



The Sharpness and Unsharp Mask facilities enable you to bring out the details in a blurred digitised picture.

Have you ever spent a couple of hundred quid on some software and, after playing with it for a while, felt that you hadn't got much for your money? No danger of that with *ImageFX*. The software is packed on to four disks, one of which is full of example pictures and animations; the manuals are a good inch and a half thick in all, compete with a hard manual house for your shelf.

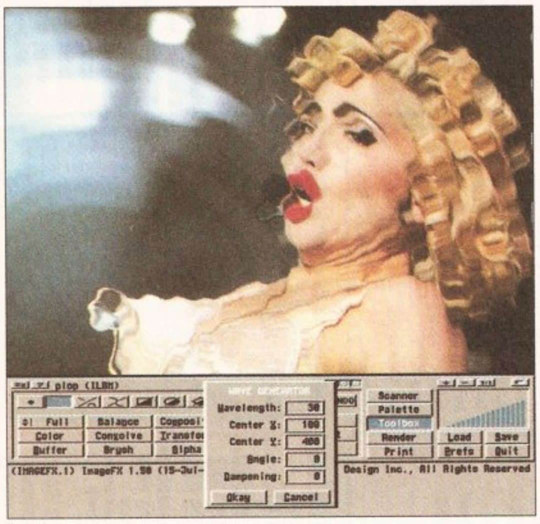
But a thick manual and high-quality packaging do not a program make. The question is how well it works. Although *ImageFX* can be run from floppy disk, the sheer size of the system is going to make it a very frustrating experience. Really, if you haven't got a hard drive I'd stay away from *ImageFX*. It will take up more than 3Mb of your hard disk, though installation is painless using the standard Commodore Installer.

As you install it, you soon realise you've got an awful lot of software for your money. For example, six scanning and video digitising modules are provided. The popular Epson GT-6500 flatbed scanner is extremely well supported, as is the Sharp JX-100, the IV-24 and PP&S Framegrabbers, and the wonderful *V-Lab*. All these devices can be used to pull pictures straight into *ImageFX*.

There's even a data-caching system that will use hard disk space to store image data when your real memory runs out. It's not real virtual memory – you can't use it to run programs – but it works, it's fast, and it doesn't cost a penny extra.

The load and save modules too all come bundled with the package. Amiga file formats aside, JPEG, TIFF, Targa, BMP, PCX and lots more are there, plus FLC animation files, the standard used by the popular *AutoDesk Animator Pro* on the PC.

A large number of rendering formats are supported. All the Amiga formats are there of course, plus there are modules that enable you to view your work on a number of popular graphics boards including DCTV, any EGS board, Firecracker24, HAM-E, IV-24, SAGE, OpalVision and Retina. (Picasso II comes with an *ImageFX* render module.) And then there's *Cinemorph*. Morphing is one the most fascinating and absorbing pastimes I know. It's painstaking work and it takes time to get it right, but when you do get it right there's no better effect.



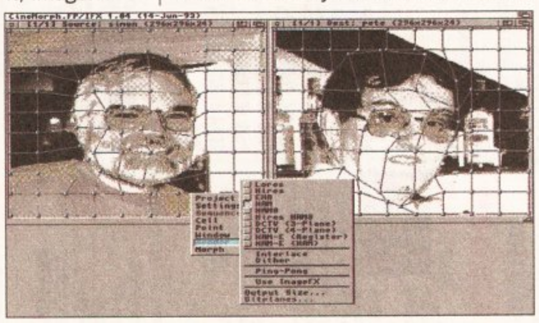
Many special effects are created in ImageFX by having a special mask sitting in the alpha buffer between the main and swap buffers. Here a very striking waveform effect has been applied to a digitised image.

Now, it's worth pointing out that to get all the above facilities with a certain well-known rival image-processing package, it would cost you about £400–£500 all told, perhaps a bit more. And even then you don't get the facility to paint or work on small areas of an image, nor well over 100 other image-processing features that are packed into *ImageFX*. The scope of the system is mind-boggling. GVP say that if you can imagine it, *ImageFX* can make it come to life. That's not quite true, because it is you that has to make it come to life – *ImageFX* is merely the tool you use. You shouldn't rush into buying it: there is an awful lot to learn. At first you are bound to feel swamped by the infinite possibilities, and it is going to take some months to become comfortable with the software. Luckily *ImageFX* has a brilliantly intuitive user interface, which makes the process of experimentation painless. You can even make up your own user interfaces, and it is not particularly difficult to do.

ARexx support is there of course, and indeed quite a few ARexx scripts are provided, particularly for processing animations.

And all this is perhaps one per cent of *ImageFX*. This is the sort of software that the Amiga was invented for. True, to get the absolute best out of it you need to own a fast Amiga, a 24-bit graphics card and perhaps a scanner or video digitiser, but then it is a fact of life that the more colours an image-processing function has to work on, the better will be the results. That's not to say you can't do a lot with 256-colour and HAM-8 images on an A1200 (with at least 6Mb of memory), but it will take longer and even small tweaks will tend to have a great effect because, although *ImageFX* always works in true-colour fidelity, if the colour isn't there to start with you can't expect more to just appear out of the blue.

There is only one other package on the Amiga that rivals *ImageFX*, and that is Black Belt Systems' *Imagemaster*. If you were to ask me to choose between them I'd rather change the subject and suddenly remember a previous engagement because, a bit like the *ProPage* and *PageStream* DTP packages, *ImageFX* and *Imagemaster* are very closely matched, destined to leapfrog each other version by version. Each has its annoying little bugs, each can do things the other can't. Both are excellent. If you push me I'd have to say that *Imagemaster* is faster and a little more powerful in some important areas, but *ImageFX* is much easier to use and a slicker product overall. AS



ImageFX includes morphing facilities – the hottest effect since effects were invented – via the Cinemorph program, a "hook" that integrates with ImageFX itself.

SHOPPING LIST

ImageFX £199.95
Upgrade to v1.50 .... £29.95
By GVP and Nova Design
Distributed in the UK by:
Silica Systems,
1–4 The Mews, Hatherley Road, Sidcup DA14 4DX.
☎ 081-309 1111

CHECKOUT ImageFX 1.50

Features
●●●●●●●●○○
Packed to the gills with processing features – morphing, scanning, animation multi-processor, you name it.

Documentation
●●●●●●●○○○
Lots of it, but it could do with more on "how to" for beginners.

Ease of Use
●●●●●●●●○○
Plenty to learn about, but the excellent interface is a pleasure to use and makes learning fun.

Speed
●●●●●●●●○○
Complex operations are always going to take a while, but *ImageFX* is no slouch.

Value for Money
●●●●●●●●○○
Considering what you get, it is a bargain.

Overall rating
●●●●●●●○○○
Some of the features are a little underpowered, one or two are bugged, but I'm sure GVP and Nova Design will continue to fix and improve.

Power for art's sake

Steve McGill looks into the new 24-bit graphics board, Village Tronic's Picasso II.

The problem with 24-bit display cards for the Amiga is that often they cost more than half the price of a new A4000/030 – the Retina card for instance sells at around £499. So the Picasso II re-targettable graphics board sounds like a great deal at only £300.

But it's not quite that simple. You need a multisync monitor to use it, and sadly Commodore's 1940 and 1942 are no use – their minimum vertical rate or line frequency isn't high enough for the 800 x 600 resolution, so you need something like the Microvitec monitor reviewed on page 33. Also, the Picasso II needs a Zorro II/III slot, so it's for A1500/2000/3000s and A4000s.



A special routine can automatically open OS-friendly programs using your pre-set preferred screen mode.

The card is however well made and easy to fit, though to connect its 15-pin output socket to the Amiga's 23-pin RGB port you'll need a 23-way female-to-15-pin-female adaptor. Considering that you aren't going to be able to use the board without one, it should have been supplied.

Unlike the Retina card, the Picasso acts as a pass-through until activated by its software. Installing this is simple too, and copies several files and programs into your hard drive directories. One of the most important of these files is the **Village.library**. Located in your **Sys:Expansion** drawer, this is the link between the card and Intuition. This library chooses the correct resolution for your monitor and only lets you use resolutions that are possible. This is probably just as well, considering that the manual is littered with disclaimers accepting no responsibility if you damage your equipment – not very encouraging!

The other important file is the **Picasso-Monitor** file. This file is an expansion on some of the more needed operating system routines. Any legally-coded program's routines are intercepted and can be displayed at your selected resolution.

This is how it works. After initialisation during the start-up, the Picasso screen modes become available through the standard Workbench Screen modes prefs. This lets you choose from the resolutions that are available. Say, for example, that you decide to open *ProPage* or a similar operating-system-friendly program. Assuming that this is the first time you're doing so since installation of Picasso, the **Changescreen** program intercepts and offers a choice of screen modes. You can specify whether or not the change should be permanent. If you've chosen permanent, the next time you load *ProPage*, **Changescreen** remembers the specified change and automatically opens your preferred screen mode. The result is that in use Picasso becomes all but transparent.



With the supplied modules for ADPro and ImageFX, Picasso always tries to display in full 24-bit colour.

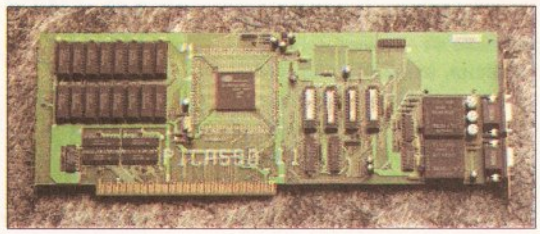
This would all be lovely if all programs that you used behaved themselves and went through the operating system before opening screens and such. Unfortunately, this is not the case. *Deluxe Paint* for example writes directly to Chip RAM. Normally no problem, but if you want to use *DPaint* with Picasso, you could be in trouble.

Luckily, Picasso has a **Copy Continuously** mode. This copies the contents of Chip RAM directly to Picasso's V-RAM (Video RAM). The downside of this is that your V-RAM and your Chip RAM are in constant use, which limits memory capacity overall. It also results in slow screen refreshes, with the occasional piece of residual garbage for good measure. Nevertheless, it further enhances the uses to which you can put your Picasso.

It doesn't stop here. There are several module drivers for programs capable of displaying much higher resolutions and numbers of colours. In this particular instance, the drivers supplied are for *Art Department Professional* and *Image FX*. Village Tronic are also currently working on *Real 3D*. With these modules in place, Picasso always tries to display in full 24-bit colour, though 1Mb Picassos are limited to a screen resolution of 640 x 480. Smaller pictures are automatically centred.

Also supplied with Picasso is a copy of *Personal Paint lite*. While this is easy to use and capable of displaying 256-colour screens, it doesn't use the higher resolutions that the Picasso is capable of displaying, there's no documentation supplied for it, and all the menu screens are in German. Just as well it's free, really.

All in all, Picasso can be recommended. It's disconcerting knowing that you can damage your equipment if you set the software up wrongly, but with a bit of care, professionals and amateurs alike will find that Picasso offers a high quality-to-price ratio. AS



The Picasso II graphics card: for 24-bit graphics, plug it in and connect RGB output and a multisync monitor.



This 256-colour Personal Paint image shows the kind of resolution Picasso II can offer on the right monitor.

SHOPPING LIST

Picasso II graphics board 1Mb £299, 2Mb £329
By: Village Tronic
Distributed in the UK by: Blittersoft, Denbigh House, Denbigh Road, Bletchley, Milton Keynes, Bucks. MK1 1YP.
☎ 0908 220196

CHECKOUT Picasso II

Features
●●●●●●●●○○
Well constructed board with many uses.

Documentation
●●●●●●●○○○
Friendly and informative. One of the few manuals where the translation process doesn't get in the way too much. Shame about the lack of documentation for *Personal Paint lite*.

Ease of Use
●●●●●●●●○○
Could hardly be easier. Only dedicated technophobes will have any real problems with the board.

Value for Money
●●●●●●●●○○
Good value for money. Consider though that you will have to budget for a multi-sync monitor as well.

Overall rating
●●●●●●●●○○
A good introduction into the world of 24-bit and Hi-res displays.

Dr Caligari's magic cabinet?

The new Caligari 24 is being touted as the best, or at any rate the fastest, 3D renderer on the Amiga. Gary Whiteley looks closely at how it shapes up...

Let's start by getting a few things straight. The new *Caligari 24* can do most of the things that other 3D programs do – render, rotate, transform, and just about animate – with the notable exceptions of algorithmic texturing, seeing exactly where you are placing a light (the nearest it gets is a view from any *selected* light), object morphing and selectable output format for full-renders.

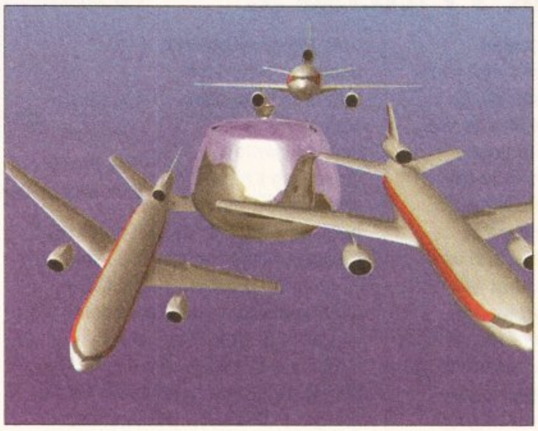
On the plus side, *Caligari 24* can import objects from *Lightwave, Videoscape, Sculpt, Imagine* and DXF formats (just as well, since its modelling functions aren't the best I've ever seen, as a look at the demo objects supplied will soon confirm). It also has a nice line in object deformations and produces rather spiffy-looking images (even though it doesn't ray-trace). It can also make animations, using heirarchical object movement if necessary.

But on the minus side: *Caligari 24* needs almost 5Mb of hard disk space to install and oodles of memory to run; it has a dongle (another for the collection!); it doesn't render particularly fast (it certainly doesn't live up to its claim of being "the fastest renderer on the market"); and it *doesn't multitask*.

All of which leaves it looking somewhat crude and dated on the Amiga, compared with programs such as *Real 3D 2, Imagine* and especially *Lightwave*, though that is of course only available with NewTek's Video Toaster. All of this is rather sad, considering that Octree pioneered the "all-round" 3D approach on the Amiga (now so acclaimed in *Lightwave)* and also the use of environment mapping for simulating reflective objects.

Now, many of these gripes aren't particularly serious, because other programs have similar requirements or problems, but surely after five years it's time Octree did something about multitasking, which is still one of the Amiga's special features. And while they're at it, implementing a few of the standard Amiga functions (like double-clicking to select files) wouldn't go amiss either.

I mean, what's the use of having a rendering in progress and not being able to do anything else? And, since not multitasking means that it has free run of the Amiga, why does *Caligari 24* render relatively slowly *and* use up so much memory? Surely *Caligari 24* doesn't need to take over the Amiga in order to do its "real-time" wireframe tricks – other programs don't.



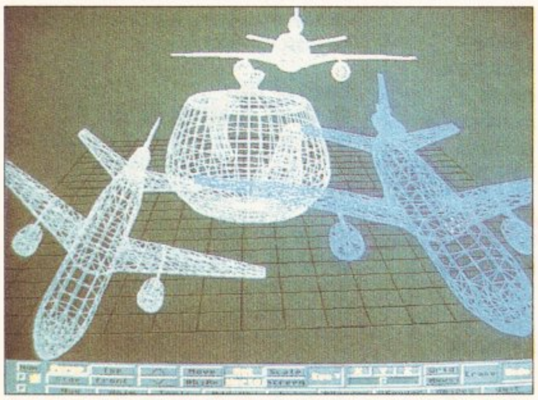
Although it can produce stunning images like this, I'm afraid Caligari 24 needs outside help to get around a number of problems. Here I've used objects supplied with Lightwave, and imported a 24-bit background as a .6rn file. Total rendering time: 40 minutes.

THE BIG PICTURE

What's more, names can be deceptive, because *Caligari 24* can't save 24-bit images! Depending on the Amiga in use, it *will* save HAM, HAM-8, 16-colour, DCTV, HAM-E or 32-bit (in Octree's own .6rn Rendition format). Mind you, the HAM and 16-colour images don't look that brilliant and HAM-E is long since defunct.

Now, Rendition format is all very well, but what happens when you want to use a .6rn image in another program, or import an IFF image into *Caligari 24?* Octree don't supply a converter, so it's down to third-party software such as GVP's *ImageFX* or ASDG's *ADPro* (plus the Rendition module from the *ProConversion* pack). Not a very bright move on Octree's part – especially since 24-bit display devices are becoming increasingly popular on the Amiga.

I also had a problem when using my Opalvision card as a framebuffer (which *Caligari 24* supports, along with several other leading display cards) – it proved impossible to actually *save* a rendered image, even in .6rn format. I tried, but it never seemed to happen. More often than not I was left locked out, watching an endlessly ticking clock icon and lttle else. A three finger restart was the only apparent solution. Again, not very bright!



Possibly the best thing about Caligari 24 is its world view, though implementing hidden-line removal would help to show which objects were behind which.

THE VIDEO

Then there's the video – a great example of a poor-quality piece of hype. The examples are admittedly pretty impressive, but there's no demonstration of how they were generated by *Caligari 24* alone, as claimed. The tour of the menus (which makes up a large part of the tape) is both dull and difficult to read, and the impression I was left with was of a promo tape packaged as an educational aid, although somehow it still manages to provide a reasonable, if basic, introduction to the program.

I'm loathe to recommend *Caligari 24* over *Imagine, Real 3D 2* or *Lightwave*, for several reasons: its hardware requirements are high, rendering time isn't anything special, its modelling could be improved (although "Deform" *is* rather nice), there are too many separate (and sometimes incomprehensible) menus, memory usage is verging on the insane and *it doesn't multitask*. Maybe it's just me, but I really don't find *Caligari 24* at all easy to use and it seems to require a lot more input than is returned in output. I'll stick with *Imagine 2* for the time being, though having had a glimpse of *Lightwave 3* I know which side of the Atlantic I'd rather have an Amiga on at the moment. AS

SHOPPING LIST

Caligari 24 .... **£99.95**
By Octree Software, Inc.
From Amiga Centre Scotland, Harlequin House, Walkerburn, Peeblesshire, Scotland, EH43 6AZ.
☎ 0896 87583.

Requirements

Caligari 24 needs almost 5Mb of hard disk space for all its installable files; an accelerator isn't obligatory but it would be *very* helpful and "a lot" of RAM (preferably 32-bit) is recommended – that is, 5Mb to 20Mb should probably suffice (phew!). A framebuffer or 24-bit display card will also be useful if you want top-quality output.

CHECKOUT CALIGARI 24

Features
●●●●●●●○○○
Caligari 24 does have its fair share of features, though they aren't always easy to get at, or even make sense of.

Documentation
●●●●●●○○○○
The manual looks pretty, and helps in many respects, but it seems top-heavy on theory rather than practice. The video has the makings of a fine demo tape, but isn't really much of a tutorial.

Ease of Use
●●●●●●○○○○
Only rarely straightforward – it's mostly frustrating and lacks many of the nice touches common in rival 3D software.

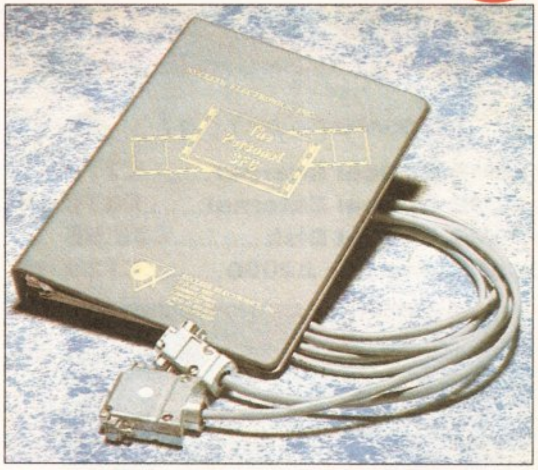
Speed
●●●●●●○○○○
I'd expected much better rendering speeds. Certainly *not* the fastest.

Value for Money
●●●●●●●○○○
Recently dropped from £299, the price might just be good enough to attract new buyers, though it will do little to address the program's real problems.

Overall rating
●●●●●●○○○○
I'm afraid that *Caligari 24* really isn't "the sophisticated and affordable tool" it claims to be. Maybe two years ago, but not now. Even at £99.95.

Absolute perfect timing

Amiga Centre Scotland have brought out a Single Frame Controller for taping graphics. Pat McDonald puts it through its paces.


The Single Frame Controller connects a video recorder to your Amiga's serial port, via some built-in circuitry.

What would you say to £390 for a cable and a disk? It's a fair slice of cash, but it's a professional Amiga-based solution to what can be a costly problem – recording an exact sequence of Amiga graphics frames of a precise length onto a broadcast videotape at the correct place.

Why not just mix all the graphics into a *Deluxe Paint* animation and tape it on your home video recorder? Total cost: ten quid. Yes, and it would look like it too. Plus you'd need huge amounts of RAM to store your animation in – something you don't need with the SFC.

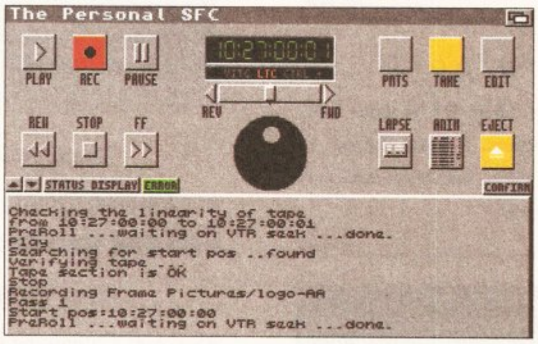
Mind you, you do need a video recorder that uses SMPTE time code, has a 9-pin RS-422 control interface, and is accurate down to the last frame. For the purpose of this review we hired a Sony PVW 2850, a snip compared to buying it for £12,500.

Now you're thinking that anyone with access to that sort of equipment has no need for a mere Amiga and its AGA graphics. Well, as well as working to all Amiga graphics standards (colour or greyscale), the SFC can drive the Harlequin, IV24, Opalvision, Firecracker, Image 24, DCTV and Video Toaster. (It did not drive the Image Engine properly.)

Setting it up is very easy, but the SFC does expect a hard-drive-based system. With power off, connect your genlocked Amiga graphics signal to the single frame VTR, and plug the cable into the serial port of each machine. Power up, install SFC and any relevant graphics drivers, then double-click on the icon to get going.

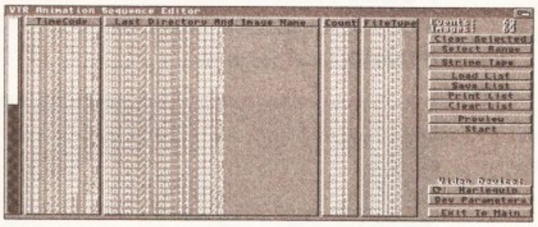
The next step is trickier. The software reads the type of VTR down the cable, and comes up with a group of pre-set control settings. Assuming you know what step delay and similar technobabble to feed into the damn thing, you're away.

Once past that, you are left with a quite well designed VTR front-end, showing the VTR type, the current SMPTE tape position, the time code in use, and features. To be honest it really doesn't give you more information than the display on the VTR, but it does make things convenient. At the bottom of the display you are given reports on the current state of play.



The well-designed but largely superfluous front control panel of the Single Frame Controller. Notice the status messages as the software performs a take.

Just click on the **anim** button to start building your production. First, black a tape with timecode if you haven't got a blacked tape – this can be done with the software but again is a standard feature of a single-frame VTR. Next, click on the time code box and enter a start point – otherwise the software defaults to 00:00:00:00. Next, click on **input list**, and find some graphics with the file requester.



Building up an edit list is largely a matter of finding the correct file with a file requester, then saying how many frames of the videotape you want it displayed for.

If the graphic is a single frame, then only one entry will be made on the list. If the graphic is an ANIM-5 or ANIM-8 sequence of frames, then one line will be added for each frame. Next to each line is the frame count, which defaults to 1 but can be increased to "hold" on a frame.

Once you have a graphic list, then you can either get it onto tape straight away or preview it. These graphic previews can require a lot of memory – but they are quarter-screen, black-and-white jobs, so you can get a few seconds or so in a 2Mb machine.

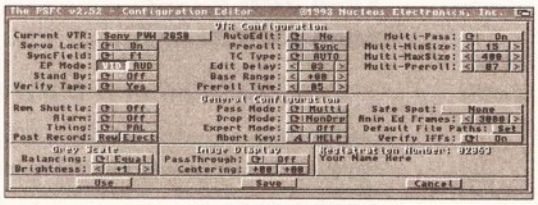
Anyway, once you're happy that the list is correct, you can print it, save it, or set the computer to "go" and watch the automated process. Each frame took about 40 seconds to record, plus about a minute of setting up and finishing off.

If you have a 900-frame segment to produce, it will take about ten hours. A preview would take about 45 minutes to generate, but it would need a lot of memory to generate in one go. All list assembly and previews can be done offline – you don't need a VTR connected until you actually want to record.

That's the good part about SFC. If you haven't got enough RAM to do something, then you can use fewer frames at a step without missing anything out of the final production. The only catch is that it won't touch files that cannot physically fit in RAM – if you have a long disk ANIM that won't decompress into memory, you'll have to slice parts of it manually before SFC can handle it.

The SFC is fully ARexx controllable, so you can render frames straight onto videotape if you want – and if you are very sure of what you're doing; but then again if you are working in a studio environment on a day to day basis, it's faster to type your editing commands than to point and click.

All the ARexx commands are covered in the quite excellent manual, which somehow manages to cover everything from the bare bones to a guide to troubleshooting when you're dealing with certain VTRs. It's quite obvious to me that a lot of time and trouble has gone into making this program as good as it is.



You have to admit, the front options on the panel to SFC are a little bit much for the video novice.

I like this solution a lot, but to be honest there's no way *I* could justify buying it. If you want to get into the business of transferring Amiga graphics onto professional quality video, then this does it very easily. Takes about 15 minutes to master and then you can arrange your graphics to your heart's content. AS

SHOPPING LIST

Single Frame Controller £390
From:
Amiga Centre Scotland
☎ 089 687583

CHECKOUT SFC

Quality
●●●●●●●●●○
Previews are memory-intensive, but everything else works a treat.

Documentation
●●●●●●●●●●
Spot on.

Ease of Use
●●●●●●●●●○
A few initial minutes of confusion.

Performance
●●●●●●●●●●
Slick, easy to master.

Value for Money
●●●●●●○○○○
Much cheaper than *Sympatica*, but even so it's a very specialised thing...

Overall rating
●●●●●●●●○○
A solid, professional utility.



power*optical*

128MB Optical Internal **£779**
128MB Optical External **£879**
128MB Optical Disk **£39.95**
SCSI Controller A2000 .... **£129**

video*backup*



Use a VCR as a backup storage advice, 200 Amiga floppy disks fit on to a 4Hr tape which can be used for an alternative hard disk backup system. What's more you can watch T.V on your 1084s monitor.

£60

floptical*drive*

The Floptical stores 20MB of data on a 3.5" disk (a SCSI interface is required).

Floptical A2000 Kit **£289**
Floptical A500 External **£389**

syquest*drive*

3.5" Removable HD from Syquest. Each cartridge stores 105MB. Syquest speed is 17ms.

3.5" Syquest SCSI External.. **£599**
3.5" 105MB Cartridge **£79**

scsi*drives*

We can supply SCSI or IDE 3.5" drives in many sizes.

52QMB **£169**
80MB **£179**
160MB **£249**
200MB **£349**

ide*internal*

2.5" Miniature internal HD for the A600/A1200, (these drives come complete with a cable and installation software)

60MB Internal HD **£139**
80MB Internal HD **£179**
120MB Internal HD **£229**

icd*products*

Trifecta 2000 LX Bare **£139**
Trifecta 2000 LX 80MB HD **£239**
Trifecta 2000 LX 160MB HD **£329**
Trifecta 2000 LX 200MB HD **£399**
Trifecta 500 LX Bare **£195**
Trifecta 500 LX 80MB HD **£295**
Trifecta 500 LX 160MB HD **£359**
Trifecta 500 LX 200Mb HD **£459**

a600*memory*

1MB RAM with battery backed clock.

A600 Memory **£39.95**

1.5MB*memory*

Fully supports 1MB of chip RAM and compatible with Fatter Agnus. (Requires Kickstart 1.3 and above, not compatible with A500+. Your Amiga needs to be opened , this may effect your warranty)

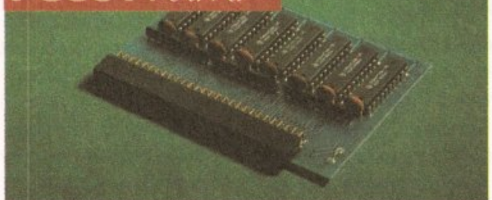
1.5MB Memory **£85**

1MB*thru'port*

Fully supports 1MB of chip RAM and fully compatible with Fatter Agnus. (Requires Kickstart 1.3 and above, not compatible with A500+. Your Amiga needs to be opened, this may effect your warranty)

1MB Thru' port **£49**

PC501+*card*



High quality memory card comes with 1MB of RAM on-board to expand your Amiga A500+ to 2MB of Chip RAM. (Fits in the trap-door, does not affect your warranty)

£36

a500*memory*

4 Chip 512K RAM expansion with or without battery backed clock. Free software included. (A500+ compatible)

A500 Card with clock **£29**
A500 Card without clock................... **£24**

a500*8mb board*

Expand your Amiga from 2MB to 8MB of RAM. Plugs into side slot, full auto config. and full through port.

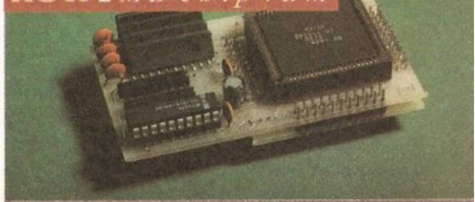
A500 2MB Board **£139**
A500 4MB Board **£219**
A500 8MB Board **£299**

a2000*8mb board*

2MB to 8MB expansion for the A2000. Full auto config., IDE interface and 12 months warranty

A2000 2MB Board **£139**
A2000 4MB Board **£199**
A2000 8MB Board **£289**

new*2MB chip ram*



Increase your Amiga's memory to 2MB of chip RAM, including 2MB 8375 Agnus, easy to fit (internal fitting), unlike every other 2MB chip RAM board currently available you A500 trap memory still works! fully compatible.

£159

special*offer*

PC1208 68882-20MHz OMB RAM board.

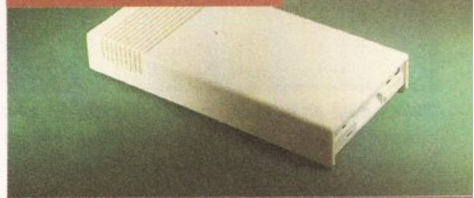
PC1208 68882 20MHz **£109.9**

power*drives*

All Power Computing's disk drives come with a 1 month guarantee. The PC880B is available wit Blitz Amiga, Blitz and X-Copy or Cyclone compat ble (this drive is only available to registered owne of X-Copy Professional). The drive comes in choice of two colours, black and cream.

PC880B with Blitz Amiga..................... **£6**
PC880B with Blitz, X-Copy.................. **£7**
PC880B with black case (CDTV) **£6**
PC880E Economy Cyclone Comp.. .. **£49.9**
PC881 Amiga 500 internal drive............ **£4**
PC882 Amiga 2000 internal drive........... **£4**
PC883 Dual disk drive **£12**

PC880B*drive*



The award winning external disk drive which includes Anti-click (cures that annoying click) Virus blocker (prevents viruses) and built-in backup hardware. Now available with Cyclone compatible chip.

£60

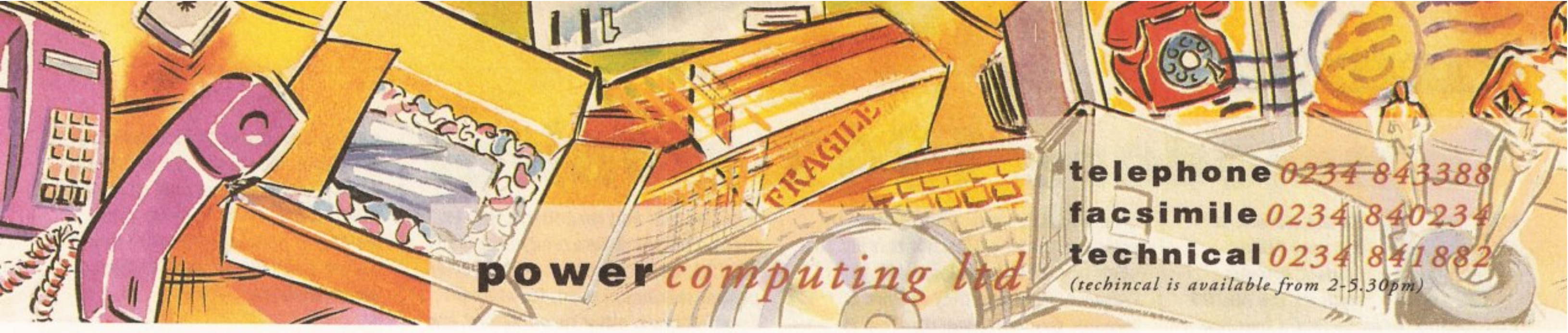
x-backup*pro*

Extremely powerful disk back-up utility, uses th latest custom chip design. Hardware designed b Power Computing.

X-Backup Pro **£29.9**

A600/A1200 Colour Scanner available soo

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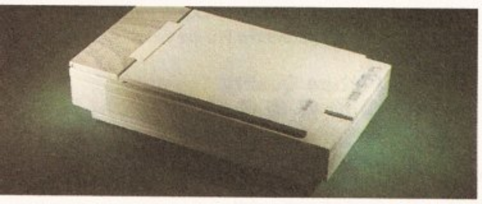


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facsimile *0234 840234*
technical *0234 841882*
(techincal is available from 2-5.30pm)

epson *GT-6500*

A high resolution 24-bit colour flatbed scanner from Epson. Scan up to A4 in size on this 600DPI scanner. Comes with PowerScan or ASDG (ASDG is an extra £99). GT-8000 scans up to 800DPI.



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Epson GT6500 ASDG	**£798**
Epson GT8000 PowerScan	**£1199**
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Document Feeder	**£399**

power *scan 4*



Completely re-designed powerful user interface, produce 256 greyscale images (on a AGA machine), scan in 64 greyscales (non AGA Amiga can only display 16), add colour to greyscale images, special effects, new support for 18-bit scanner, add text to scans, available with mono or colour scanner.

£119

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(OCR full version is only available to registered users of OCR Junior)

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Comes complete with English phone cable, RS 232 serial cable, PSU & comms software.

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pc *1208*

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pc *1204*

The original PC1204 4MB 32-bit memory expansion is still available, and is exceptional value.

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The 1.76MB Disk Drive* can be used with any Amiga. With the 'XL Drive' you can fit a massive 1.76MB on a high density floppy disk, the drive can also act as a standard 880K drive and can also read & write disks written on an Amiga 4000 internal HD drive.

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*Requires KickStart 2 or above.

exclusive *products*

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Power Computing can now upgrade your PC880 drive from a 880K to a 1.76MB high density drive, all you need to do is check that you have the serial number 'Sony MFD17W-22' on your disk drive casing. (You'll need to unscrew the casing. This does not affect the warranty)

PC880 Interface upgrade £49.95

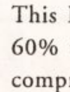
new

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Disk Expander £35

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Commodore 1942 monitor

With the advent of the new AGA-chipset Amigas such as the A1200 and A4000, even buying a monitor isn't as simple as it used to be.

Back in the old days, any standard RGB monitor would happily display the entire range of Amiga screen modes, but the AGA chipset offers a number of new screen modes that are incompatible with standard RGB monitors. These "DBL" modes offer much better picture definition and even rid the Amiga of the dreaded interlace flicker that plagues high-resolution screens on pre-AGA Amigas. They do this by operating at twice the horizontal scan rate of conventional Amiga displays, meaning they require a monitor that can keep up. This is exactly what Commodore have come up with in the new 1942 monitor.

The 1942 is actually a "dual sync" monitor – it is capable of displaying not only the higher speed DBL screen modes, but the standard Amiga screen modes too. Not impressed? You'd be surprised how many multisyncs can't handle the slower 15.75 kHz signals and therefore can't display software that by-passes Workbench 3.0's "mode promotion" facility (which bumps up the display mode automatically). This includes the many games that "hit the hardware", which makes them impossible to convert to DBL format.



Commodore's 1942 monitor – solid construction, tube by Philips, Amiga-colour-coordinated... and multisync!

The cream casing matches the AGA Amigas, and as you'd expect from Commodore, the build quality is very good too. All the controls (which are located behind a flip-down panel on the front of the monitor) have a very positive and responsive feel to them. The 1942 has a high dot pitch of 0.28, which means it offers better picture resolution than, for example, Commodore's other new monitor, the 1940, which has a rather mediocre 0.39 dot pitch (but is £100 cheaper).

The 1942 comes with a "hard wired" lead that ends in a VGA-like 15-pin D connector (the kind used by PCs). Thankfully Commodore include a suitable adaptor that converts the 15-pin connector to the more standard 23-pin Amiga RGB plug.

The picture quality is very good, especially when compared to the old single-scan 1084 monitor, but the unit we tested did have a few problems – the tube displayed disturbing signs of purity problems, "pin cushioning" (where the edges of the screen warp, rather than being perfect rectangles) and convergence errors, which become particularly bad in high-resolution mode because the smaller pixels reveal more colour "ghosting". This was probably just a fault in the test unit, and if so, the 1942 is a good option. However, rumour has it that Philips are soon to release a successor to the brilliant CM8833 that will be able to handle AGA modes, and it may be worth waiting to compare this with that before parting with your readies.

Jason Holborn

SHOPPING LIST

Commodore 1942 monitor £399
By: Commodore UK
Available from: Silica Systems, 1–4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX
☎ 081 309 1111

CHECKOUT COMMODORE 1942 MONITOR

Build Quality
●●●●●●●●○○
As well-designed and solidly built as you'd expect a Commodore monitor to be, with a reliable Philips tube.

Picture Quality
●●●●●●○○○○
Very good when compared to a conventional single-scan monitor, but not quite up to the same standards as leading multisyncs.

Documentation
●●●●●○○○○○
The manual tells you how to set the monitor up but little else. Some form of pin-out diagram would have been nice.

Value for Money
●●●●●●●○○○
May seem cheap when compared to the original 1084, but there are other (and better) multisyncs available for the same price.

Overall rating
●●●●●●○○○○
Unless you're a Commodore stalwart, it may be wise to check the competition – particularly Philips's soon-to-be-released successor to the CM8833.

Nexus Backdrops

Six sets of disks full of copyright-free images, each set costing £29.99 – that's Videoworld Multimedia's *Nexus Pro Background Sets.* Available in two flavours, AGA and "Pre-AGA", the whole collection contains around 140 images derived from digitised photos, real-world objects and slides. I saw a review set including a "representative" cross-section of images.

IT'S ON THE DISK

The different sets are Fabrics, Papers, Textures, Travel and Weddings/Romantic, with the sixth set being an introductory "Sampler" set consisting of the "Best Of" the five full sets.



This one's "Satin"; there's another you can check on the cover disk.

The AGA variations are mainly 704 x 566, 256-colour or HAM-8 images – and boy do they eat up disk space. Most of the demo images were well over 300K in size, some even as large as 400K, which goes some way to explaining why the AGA sets have ten disks per set to the Pre-AGA's seven, even though the Pre-AGA sets actually contain more images. If you want to get at them fast (for instance while running a live desktop video presentation) you'll definitely need to save them to a hard drive. I'd also think some extra memory would come in very handy if you're using an A1200 with the HAM-8 images.



Some examples of the Nexus Pro backgrounds. This one is "floor"...

The Pre-AGA images are mostly 16-colour 704 x 566 images – again overscanned, but of course with not quite as much colour as their AGA counterparts. The obvious result is that the non-AGA files are smaller, but with much of the original colour inevitably lost. However, I'm pretty sure that this won't bother non-AGA Amiga owners, especially if they are familiar with the excellent 16-colour backgrounds supplied with ScalaMM and Scala VT100.

Gary Whiteley

SHOPPING LIST

Nexus Pro Backgrounds £29.99 per set or £130 for all five full sets
By Videoworld Multimedia
From Videoworld, 8 Ardoch Gardens, Cambuslang, Glasgow G72 8HB.
☎ 041 641 1142.

CHECKOUT NEXUS PRO BACKGROUNDS

Documentation
●●●●●●●●○○
No printed documentation supplied with review set, but I didn't need any to use the images and a Readme file told me all I needed to know.

Ease of Use
●●●●●●●●●○
Use your favourite paint, presentation or image-viewing program, so long as it can handle the picture formats.

Value for Money
●●●●●●●●○○
Plenty of pictures for the pound, though of course the value depends on whether you're likely to use all the images.

Overall rating
●●●●●●●●○○
From what I've seen these pictures look excellent, though I'd have preferred them to be delivered in 24-bit JPEG format as standard, not at extra cost.

Microvitec multisync monitor

TV sets may be cheaper, but on a monitor the difference in picture quality is really enormous – especially with a multisync such as this, though you can't plug it into any Amiga except an A3000 without a Commodore interface (£20 from First Choice), which plugs into the 23-pin video connector and gives a standard 15-pin S-VGA output.

The 9-pin multisync cable supplied, although not an Amiga standard, should connect to most deinterlacer ("flicker fixer") units and also some 24 bit display cards like the Image Engine (see page 20). You don't actually need a deinterlacer though – the monitor scans the incoming video signal, be it 15 or 31KHz, and synchronizes the picture automatically so that it doesn't jump.

The monitor has a universal power supply to use US voltage, and can take NTSC Amiga output as well as PAL. It can automatically detect IBM PC CGA/EGA TTL input and switch to the different standard, though this is redundant for Amigas.

The screen display warms up quickly and is very good compared to similar .28-inch matrix tubes. Colours were noticeably crisper than my aging CBM 1950 multisync, with great luminescence (brightness). Edges were sharp, and low black levels produced acceptable shadows.

You don't select image size or adjust positioning with a simple knob. Instead, four buttons are used to change the setting, adjust the position and store the final tweak. It's nice to see a programmable monitor, but I would prefer to be able to store a range of different settings for use with different displays. One less useful feature is that the power light changes from green to amber when the monitor is receiving what it thinks is a sync signal.

Rather than sporting the pathetic loudspeakers found in cheaper monitors, this one has no sound at all, so you'll have to plug in your hi-fi system. Fair enough; the Amiga sounds better when run through decent amps anyway.

This is an expensive monitor, but if you are a globe-trotting serious Amiga graphics user and you need to differentiate between every single pixel on-screen, it could be a worthwhile investment.

Pat McDonald



Microvitec's multisync monitor: a steady picture, even if you go to the US or hook it up to a PC, if you must.

CHECKOUT
Microvitec Monitor

Features
●●●●●●●●○○
Above average for a multisync.

Documentation
●●●○○○○○○○
Technically precise but irrelevant to Amiga users.

Ease of Use
●●●●●●●●●○
Set it, forget it.

Performance
●●●●●●●●○○
One of the best sub-£500 tubes I've seen, plus NTSC and PC compatibility.

Value for Money
●●●●●●●○○○
Worth it, but not by a lot.

Overall rating
●●●●●●●○○○
A good display, but just out of most people's price league.

SHOPPING LIST

Microvitec Multisync £410
From: First Choice, Unit 3, Armley Park Court, Off Cecil Street, Stanningley Road, Leeds LS12 2AE
☎ 0532 319444

RPaint

***RPaint*, a new addition to the world of Amiga paint programs, offers most of the usual features, and then some. Possibly its strongest point is full ARexx support, meaning you can use ARexx to control its functions for you, from scrolling text to animations or writing a CAD package running under the *RPaint* umbrella. You can also control *RPaint* direct from AmigaDOS.**

There are huge capabilities in screen size, from 320 x 200 right up to 16,368 x 16,384, as well as the option of a palette ranging from two to 64 colours. HAM however is not supported. A "Doodle mode" enables you to mess around while the old 68000 processor is tied up making time-consuming calculations, and two bitmaps give you the *DPaint* "Spare/ Main screen" option. Overscan is supported in all the working modes, and you can create icons for any of the pictures, brushes or palette files you might care to make.

Unlike other art packages, *RPaint* does not have a collection of tools either drawn down the side of the screen or in a sub-menu. Instead, the generation of all drawn shapes, fills, brushes, and all the rest is done by pull-down menus:

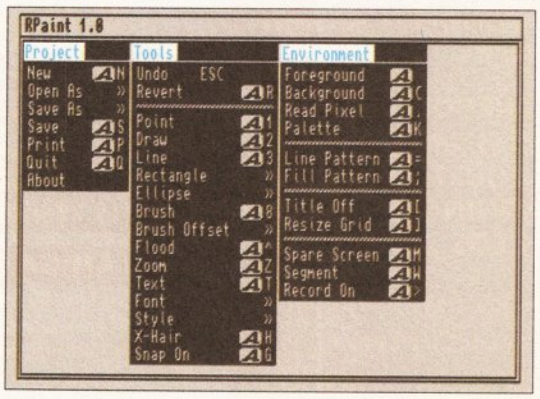
- **Project** handles the usual disk and file loading and saving controls, as well as Info and Print.
- **Tools** is the main drawing and image-generating menu, with options for geometric solid and hollow forms, as well as text importing, brush creation, fills and grid overlays.
- **Environment** allows movement between screens, plus colour control, pattern fills and grid alterations.

All options on the menus have the expected keyboard short-cuts, but learning a whole set of routines is time-consuming, and the absence of on-screen icons makes using the program very slow. I found myself growing impatient with having to move to the menus all the time.

RPaint does grow on you, but it doesn't really stand up well to the inevitable comparison with *DPaint*. It has many of *DPaint's* features, but they're harder to use and harder to get at. Automating them with ARexx is fine, but you have to work them out in the first place, and in any case the average user will want to just use the program, not bother with scripts and such. The whole package is not intended for the beginner, and the manual reflects this, being written in unfriendly and technical jargon.

It will take you longer to familiarise yourself with *RPaint* than most art packages, and the drawing and painting capabilities, which is what an art program should be all about, remain hard to use without icons or colour menus. As it is, and despite the excellent ARexx support, the usefulness of this program as a paint package is limited.

Wilf Rees



RPaint's features – most are analogous to DPaint's. There are keyboard shortcuts for most, but learning them is time-consuming and there are no icons to help.

CHECKOUT
RPaint

Features
●●●●●●●●○○
ARexx and AmigaDOS support – brilliant! And most of the standard art package functions are there. Somewhere.

Documentation
●●●●●●●○○○
Full, but heavy! Keep your Jargon Busting columns handy.

Ease of Use
●●●●●●○○○○
Okay if you know ARexx or can learn keyboard shortcuts very quickly. Otherwise slow and tedious continually pulling down menus.

Value for Money
●●●●●○○○○○
Depends what you want. I want features I can use.

Overall rating
●●●●●●○○○○
Shame, it could have been outstanding.

SHOPPING LIST

RPaint £52.25
From: MegageM, 1903 Adria, Santa Maria, CA 93454, USA
☎ 0101 805 349 1104

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THE PUBLISHER DTP *NEW PRICE!*.....£24.99
WORDWORTH 2 AGA..........£44.99

Wordworth v2 AGA

The new version of Digita's high-end word processor *Wordworth* v2 AGA is exactly the same as *Wordworth* v2, the only differences being added support for 256-colour custom screens, plus DblPAL, Super72 and Super High-Res Interlaced. HAM-8 graphics are also now supported, plus 256-colour ILBMs and PCX files.

Wordworth's specialist area is printer font support. It is the only WYSIWYG Amiga word processor that will enable you to swap printer fonts mid-document, mid-line, or even mid-word if you must. You can also use some of the fonts built into various printers, which means faster printing, but these are not scalable, so you are stuck with certain sizes, usually 10pt and 12pt, which are dictated by the printer. Not all the fonts in every printer are supported, so check with Digita before shelling out.

For greater font flexibility, you can use Compugraphic outline fonts. *Wordworth* v2 AGA comes with 17 of them, and plenty more are available commercially and on PD disks. Their disadvantage is that everything is printed as graphics, which considerably slows down printing times. PostScript printing is supported in mono only, and *Wordworth* comes with screen fonts for the classic 35 typefaces found in most PostScript printers. There is no facility to use or download PostScript soft fonts.



Provided you have the memory and the time (and a fast Amiga), Wordworth v2AGA will enable you to include 256-colour pictures in your documents.

Of all Amiga word processors, *Wordworth* currently has the most features and the best all-round printer support, qualities that are reflected in its price. It has a pleasant user-interface that isn't too difficult to learn, thanks to the excellent manual, and in a sensible word-processing screen mode it runs as quickly as any other WP. However, running it in even 16 colours slows it down badly on anything but an Amiga 4000, almost unusably so. In 256 colours, even on an A4000/040, *Wordworth* v2 AGA is so slow that I can't imagine anyone living with it.

Weighing price against features and performance, *Wordworth* v2 AGA is certainly the best word processor on the Amiga. But compared to the top Windows™ word processors *WordPerfect* and Microsoft *Word* on the PC, which cost about the same, *Wordworth* looks very ordinary indeed. *Wordworth* 3 is just around the corner and great improvements are expected, so watch this space.

Jeff Walker

SHOPPING LIST

Wordworth v2 AGA £129.95
By: Digita International Ltd,
Black Horse House,
Exmouth EX8 1JL.
☎ 0395 270273

CHECKOUT WORDWORTH V2 AGA

Features
More features than any other Amiga word processor, but way behind what word processors on other platforms are offering.

Documentation
A good manual, slightly spoilt by the lack of a beginners' "how to" section.

Ease of Use
Intuitive interface, but getting the printout you expect can be difficult for beginners.

Speed
Yawn in anything but two or four colours.

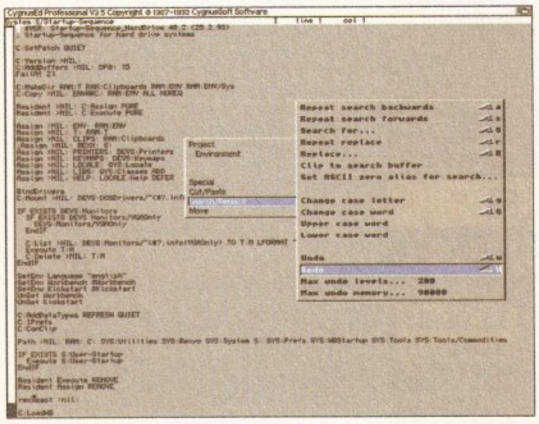
Value for Money
In today's marketplace, underpowered and overpriced.

Overall rating
The best current Amiga WP, but *Wordworth* is rapidly falling behind the times. A version 3 to match the likes of *Word for Windows* is needed.

CygnusEd Professional 3.5

Not many Amiga programs have stayed the course, but *CygnusEd Professional*, better known as simply *Ced*, is one of them. It was launched about six years ago when Kickstart 1.2 was still the new kid in town. And even then it supported a weird thing called ARexx, which – I quote from a review of the time – "apparently has the ability to interface with other programs". Sends shivers down my spine, that does.

Ced is not a word processor, it is a text editor. You *can* process words with it, of course, but *Ced's* main calling in life is not to prepare and format text ready for printing, it is essentially for writing and developing programming language source code, be it in C, assembler, Pascal, ARexx, AmigaDOS or whatever. Most of the features are biased towards helping the Amiga programmer produce and maintain code more quickly, like the unbeatably fast search and replace facility. On an A4000/040 *Ced* can replace 100,000 occurrences of one character with another character in a 1Mb file in about 10 seconds – that's 10,000 finds and 10,000 replaces every second. Obviously it's not so quick on the slower Amigas, but even on a straight A500 the average search and replace task is over before you blink.



CygnusEd Professional's comprehensive Undo and Redo levels make it easy to step quickly backwards and forwards through a text editing work session.

There's more to text editing than search and replace, of course, and *Ced* has just about every feature that a programmer could want from a text editor, including comprehensive macro and ARexx support. Heck, if you are a C programmer you can even send commands to *Ced* straight from your C program rather than having to go through ARexx.

Up to 30 *Ced* windows can be opened, each with a different file, or each showing a different view of the same file. Simple word wrap and formatting features enable you to use *Ced* as a rudimentary word processor, and indeed most shareware programmers bash out their manuals in *Ced*, which accounts for the carriage returns at the end of every line instead of at the end of every paragraph, which is what a word processor would do.

It would be unfair to call *Ced* the ultimate Amiga text editor because there are a growing number of programmers using Oxxi's rival *Turbotext* package these days. But *Ced* has stayed the test of time and has a pedigree second to none.

Jeff Walker

SHOPPING LIST

CygnusEd Professional 3.5 £79.95
By: CygnusSoft Software and ASDG Inc.
Available in the UK from:
Brian Fowler Computers Ltd,
11 North Street,
Exeter EX4 3QS
☎ 0392 499755

CHECKOUT CYGNUSED PROFESSIONAL 3.5

Features
Contains more features than you'll probably ever use.

Documentation
240 pages, half of which is dedicated to controlling *Ced* via ARexx.

Ease of Use
You hit a key, a letter appears on the screen. But thanks to the sheer number of commands, it'll take a while longer to learn all of them.

Speed
The speed of its search and replace feature is phenomenal.

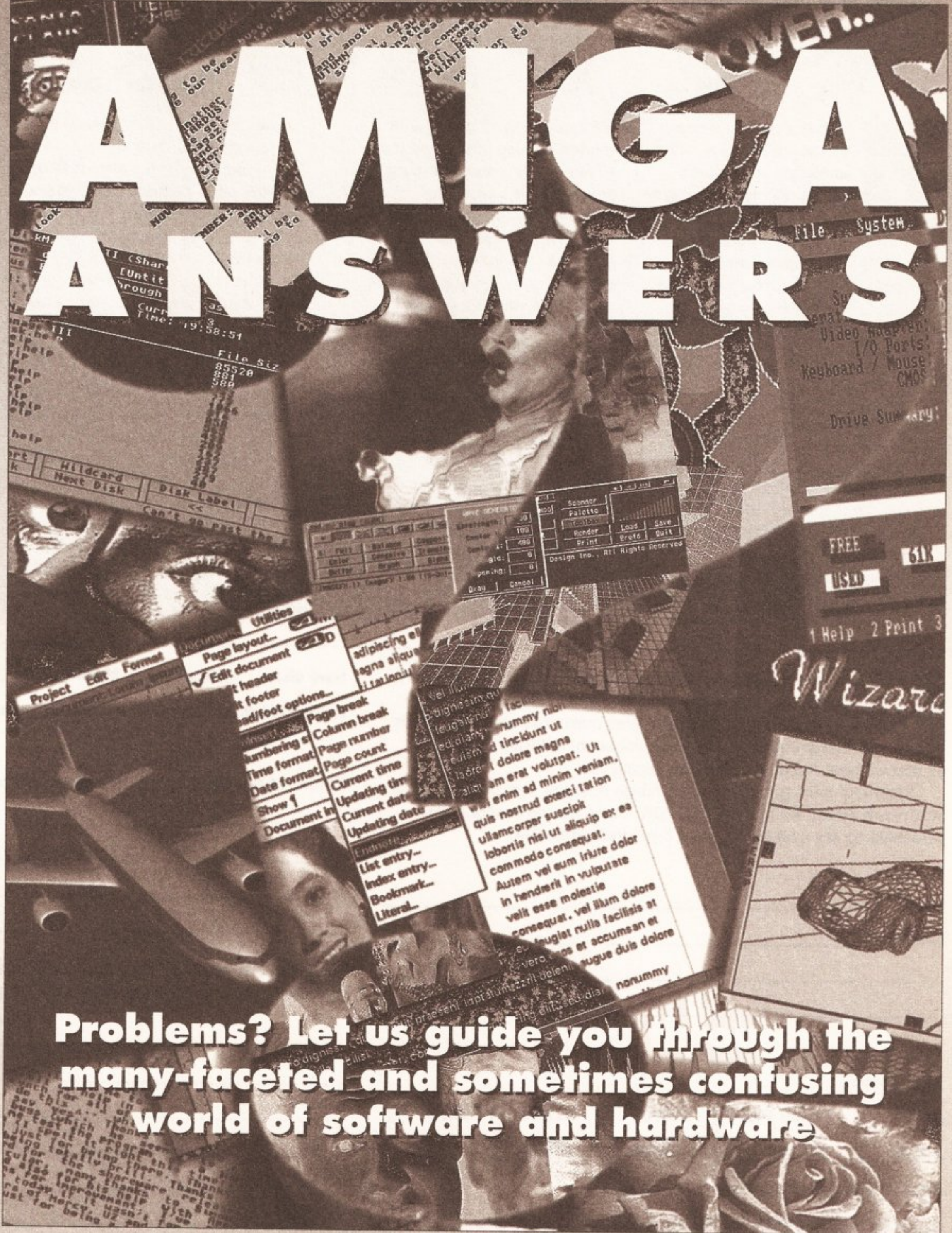
Value for Money
A bit pricey compared to average non-WYSIWYG word processor prices.

Overall rating
A million Amiga programmers over six years can't be wrong.

CONTENTS AT-A-GLANCE

OUR EXPERTS TACKLE YOUR REAL-LIFE PROBLEMS

AMIGA ANSWERS



Problems? Let us guide you through the many-faceted and sometimes confusing world of software and hardware

USING THE ICONS TO FIND WHAT A QUESTION'S ABOUT

BEGINNERS Questions that raise basic problems or deal with elementary issues feature this icon.

GENERAL This icon's for general Amiga-related queries or questions that don't fall under other headings.

DTP This is the icon you'll find next to queries related to the whole area of desktop publishing.

MONITORS Questions about monitors, including television display problems, will feature this icon.

HARDWARE This icon's for queries relating to general hardware, excluding kit covered by other headings.

BUYING This icon indicates a question asking for buying advice in any area, hardware or software.

PRINTERS If a query concerns printers, printer drivers and hardcopy problems, this is the icon you'll find.

CODING Questions about coding (no matter which language) will have this icon next to them.

VIDEO This one's for queries about using your Amiga with video hardware such as genlocks or digitisers.

MUSIC This icon is for questions about MIDI, sampling, synthesizers and music software.

SOFTWARE Queries about specific software packages or programs have this icon next to them.

COMMS If your question relates to comms, including modem problems, this is the icon we'll use.

NO PROBLEM!

Hello and welcome to our magazine within a magazine – the place where we endeavour to solve all of your Amiga-related problems. We'll deal with any sort of problem, no matter how trivial or complex, no matter what aspect of the Amiga it involves. We devote more space than any other magazine to this service, and we use icons extensively to make sure you can find your way around the pages as easily as possible, and find the solutions to the problems you have. Our use of jargon-busting boxes ensures that you'll be given explanations for any unfamilar terms. We also try to put the problems in as wide a context as possible, so that their solutions will benefit not just the person who has written in, but all of you with related problems. So even if you haven't sent a problem in for answering, it's worth having a look through these pages to see if someone else has asked a similar question. The index on the previous page will give you a guide to the topics covered this month.

We draw on the services of a talented team of Amiga enthusiasts, all of whom are widely regarded as experts in their fields. **Mark Smiddy** is our AmigaDOS and floppy drive expert. **Jeff Walker** is our desktop publishing, fonts and printer correspondent. Then there's **Gary Whiteley**, an expert on video applications and graphics. **Jason Holborn** has mastered the intricacies of AMOS, and with his advice you'll be able to do likewise. Jason also has an encyclopedic knowledge of what's available in the PD world. If you have a query about comms then we'll set recent star of the small screen **Dave Winder** on the case. **Toby Simpson** is our expert code clinician. If you're experiencing problems with anything from C to assembler, try taxing his little grey cells instead. You'll find his special Code Clinic section – in which he removes the bugs from your programs – on page 46. **Wilf Rees** is a man with an education – well, an expert on educational software, at least. He's also got a jolly useful all-round knowledge of Amiga hardware and software. Last but by no means least is **Jolyon Ralph** – he also knows lots about hardware, and specialises in hard drives and CD-ROM systems.

So that's our batch of boffins – it's up to you to keep them busy. They thrive on your problems, so be sure to send them in. Remember, it doesn't matter how simple or complex they are – everyone has to start somewhere, so beginners shouldn't be afraid of asking for help, and even the most experienced Amiga user can get stuck occasionally. And if you've got any tips or hints to share with your fellow readers, then send them to us and you could soon be a tenner richer. Please mark the envelope "Tips" and send them to the Amiga Answers address specified on the form below.

Please don't include an SAE with your questions – we simply receive too much mail to be able to offer a personal reply service.

If you send in a question for the Amiga Answers experts, please fill in and include the form below (or a photocopy if you don't want to cut up your magazine). And please also make sure that you include all the relevant details – version numbers of software and so on – so that we have the best chance of helping you.

Send your form and question to: Amiga Answers, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW. Sorry, but we cannot reply personally to any questions – even if you include an SAE.

Name: ____________________

Address: ____________________

____

____

Your machine:

A500 ☐ **A500 Plus** ☐ **A600** ☐ **A1000** ☐ **A1200** ☐

A1500 ☐ **A2000** ☐ **A3000** ☐ **A4000** ☐

Approximate age of machine: __________

Kickstart version (displayed at the "insert Workbench" prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.04/2.05** ☐ **2.1** ☐ **3.0** ☐

PCB revision (if known). Do not take your machine apart just to look for this! __________

Total memory fitted (see AVAIL in Shell for Workbench 1.3) __________

Chip memory available (see AVAIL in Shell) __________

Agnus chip (if known) __________

Extra drive #1 (3.5in/5.25in) as DF__: Manufacturer __________

Extra drive #2 (3.5in/5.25in) as DF__: Manufacturer __________

Hard disk: ____Mb as DH__: Manufacturer __________

Extra RAM fitted – type, size in Mb and manufacturer __________

Details of any other hardware which could help us to answer your question:

____

____

____

____

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

____

AS 33

ANYONE FOR T?

I recently bought an A1200. Upon loading many of my old "self-made" disks, such as my database and so on, I get an error window telling me to "insert volume T". When I click on cancel, the program loads as normal. Just what is "T"?

Also, I've noticed that when I insert a disk into the drive it takes a few seconds before it starts to read the disk, whereas my old Amiga (Workbench 1.3) started almost immediately. Do I have a problem or is it the same with all A1200s?
Chris Wright
Radcliffe
Manchester

In AmigaDOS 3.0, when some Shell commands are executed, a temporary file in an assign called "**T:**" is created. Normally, the computer would look at the RAM disk to find the directory "**T**". In your case, it cannot find this drawer and is unable to write a temporary file. Although this error will not usually affect the running of a program, it can be quite annoying, so add these lines to near the start of the Startup-sequence of your self-made disks.

```
makedir ram:t
assign t: ram:t
```

Once this is done, your Amiga will know that the **T:** drawer is located in **RAM:t.**

Regarding the time lag between your inserting a disk and the computer reading the disk, you do not have a problem. Depending on how busy the CPU is at the time you insert a disk, the read times for the disk drive may vary. ***WR***

OPEN THE TRAPDOOR

I've just installed Trapdoor and Point Manager on my hard disk. They seem to work okay, but when I phone my Boss I get connected and then Trapdoor closes down without getting any messages. How do I tell it what messages to pick up and where from?
John Sparks
Wellington
Somerset

The problem is that you haven't yet told the software at your Boss what areas you are interested in, and to do this you need to use AreaFix. Basically when you want to join an echo you send a message to an AreaFix robot running on the BBS in question, and in order for the message to be processed you need to agree an AreaFix password with the SysOp, so give him a call.

Using the **AMIGA_UK** echo as an example, construct a netmail message with a body text of

```
+AMIGA_UK
```

and send it using Point Manager and Trapdoor to your Boss with a subject of **<password>** and address of **AreaFix.** The AreaFix running at your Boss will then process this and join you to the echos, and messages will be picked up next session.

So assuming your AreaFix password is "wibble", the netmail would look like this:

```
TO: AreaFix
SUBJECT: wibble
+AMIGA_UK
```

If you want to join several echos at once then the netmail should look like this:

```
TO: AreaFix
SUBJECT: wibble
+AMIGA_UK
+WORKBENCH
+AMIGA_DTP
-COMMS
```

Many thanks to Fidonet guru and all round nice guy Ian Moran for his expert advice. ***DW***

BLACK PAGES

***Scribble!* didn't work very well with my Canon BJ-10ex printer, but with help from Canon we discovered by trial and error that it could be made to work as long as the Workbench 2 disk used with it had a USA keymap, and as long as the BJ-10ex was used in Epson LQ mode.**

This wasn't very satisfactory, so I bought *Wordworth 2.* Since February Digita have provided me with two replacement disk packs, but the system will still not print outline fonts; it will only work with internal printer fonts. If I try to use outline fonts my BJ-10ex will only print a solid black block, even if on the screen just one character is displayed.

I recall there has been a history of difficulties with printer drivers associated with Canon BJ printers. Canon were most helpful and sent a disk with an appropriate driver for the *Scribble!* program. Digita's *Wordworth* comes with its own Canon BJ driver, but is this a valid driver? If it would be better to install Canon's own driver to make *Wordworth* function properly, can you explain how this should be done?
A Sanders
Hempstead
Essex

Huh? What history of Canon BJ printer driver problems? The truth is the complete opposite. Canon UK were sensible enough to commission the development of a disk of Amiga printer drivers, thus making Canon bubble jets one of the most compatible printers you can buy for use with your Amiga. That disk is what I assume Canon sent you, although it has been updated a couple of times since February, so perhaps you don't have the latest version.

To install the correct Canon driver for the BJ-10ex, simply run the installation program on the Canon drivers disk and answer the few questions it poses (like what printer have you got). It's an absolute doddle. The Canon driver is a much later version of the driver distributed by Digita on the *Wordworth* disk – they asked for and got permission from Canon to include it on the *Wordworth* disk.

The last time this "solid black block" cropped up it was with *Professional Page* and it was solved by making sure that the **Shade** option in the Workbench **PrinterGfx** prefs program was set the same as the equivalent setting in the *Professional Page* print requester. So try that. And make sure the BJ-10ex is in BJ mode, not Epson LQ mode. If you want to use the BJ-10ex in Epson LQ mode, use the EpsonQ driver that was supplied to you with Workbench. ***JW***

SURE OF SHELL

1. I have a number of programs that require an "assignment" to be made in order to work correctly from my hard drive. The manuals bundled with these packages say that I should place these assignments into my "S" directory. When I type the assignments in using the Shell "Edit" command and reboot, the programs still try to access the disks they came from. Please tell me exactly how to save my assign statements in such a way that they are automatically carried out whenever my hard drive boots up.
2. I have an XT bridgeboard fitted to my machine. It would be nice if I could use the 5.25-inch drive to run some C64 software. I have an emulator but it only operates on the 3.5-inch drives. Is there any way to make the emulator acknowledge the existance of the XT bridgeboard drive? This drive was fitted at the time I purchased my machine.
3. Finally, I have read in *Amiga Shopper* that it is wise to have a virus killer running at all times. How do I insert the virus killer into my startup-sequence so that it is always running when the machine is booted up?
Charles Hooker
Stroud
Gloucestershire

1. It sounds to me as if you're not entering the assignments into the correct file. If the manuals are simply stating that the assignments should be placed into the "**S**" directory, then this is a little misleading. They should in actual fact be entered into your "**StartUp-Sequence**" file, which itself is in the "**S**" directory. Simply enter this line at the Shell prompt:

```
Ed S:StartUp-Sequence
```

Then enter your assignments somewhere within the startup-sequence and with a little bit of luck it should work.
2. Unfortunately there's no way to get the disk drive connected to your XT bridgeboard to read C64 disks, simply because C64 disk drives have their "DOS" (disk operating system) built into their firmware – that is, in ROM. In order to read C64 disks, you'll need to buy a special adaptor produced by the emulator manufactuer which will enable you to connect a real C64 disk drive to the Amiga.
3. If you're using a program like John

JARGON BUSTING

BBS – Bulletin Board System. The name comes from the American College bulletin board (the cork and drawing pins type) which is a traditional meeting and trading place.

FIDONET – a system enabling many bulletin boards to be connected together so that messages can be transfered bewteen them.

Startup-sequence – A program which is executed every time the Amiga is switched on and after every reset. It sets up the system so that it is usable from Workbench, and may be customised by those who have unusual requirements.

SysOp – System Operator – the person who sets up and controls a bulletin board.

Trapdoor/Point Manager – Specialised FIDONET software.

Veldthuis' *Virus Checker* (successive revisions have been on the *Amiga Shopper* cover disk a number of times in the past), the easiest way of "installing" it is to simply copy it into the **WBStartUp** drawer on your hard disk boot drive. ***JH***

BETTER SOFTWARE REQUIRED

PRINTERS

When I'm using my Amiga 1200 and the *Citizen Print Manager* software with my Star LC24-200 printer, the software gives a recoverable alert. If, after recovering, I try to print, the machine gives a software failure after printing one page. I have also tried *Turboprint* and this does the same thing.
E Hayes
Blackburn
Lancs

Obviously *Citizen Print Manager* and *Turboprint*, two programs (from the same German developers) that "patch" the operating system, are not completely compatible with Workbench 3. Your best bet is to get hold of *CanonStudio* (from JAM on 0895 274449). Although this software was written for Canon bubble jets, because Canon bubble jets are Epson compatible, the *CanonStudio* "BJ-EC" driver also works with Epson compatible 24-pin printers like those made by Star and Citizen. (The "EC" in the driver's name stands for Epson Compatible.) All the *CanonStudio* drivers and preferences programs are perfectly stable under Workbench 3. In fact you need at least Workbench 2 to use it. ***JW***

STRINGING ALONG

CODING

I'm trying to learn C. I have got DICE from Fred Fish Disk 491, and *Mastering Amiga C* by Paul Overaa. My problem is that I can't assign strings to char arrays. I've tried examples from *Mastering Amiga C*. DICE consistently refuses to compile these. Do I need to register DICE to get this feature, or am I being really stupid?
David Lambert
Garrowhill
Glasgow

No, you've simply found one of the features not implemented in DICE yet. I've tried this using DICE version 2.06.21 several times in different ways without luck. It was something Matt Dillon (the author of DICE) was intending to do in a future version, and may yet do – he is currently working on a commercial version of DICE. SAS C 6.3 will do string assignments of the type you were trying (all as one line, of course):

```
char test_string[20] = "Hello ☛
world!";
```

DICE will not compile this, as you have discovered.

Don't despair though – this *will* work (the ☛ means no line break):

```
#include <stdlib.h>

char test_string[20];

strcpy(test_string, "Hello ☛
World!");
```

If you want to explore DICE some more, get hold of the new book, *Complete Amiga C,* published by Future Publishing and written by *Amiga Shopper's* own editor, Cliff Ramshaw. (You've had a taste of it in the introductory book free with this issue.) As well as covering more of the C language, it comes with the enhanced full version of DICE, which offers extra features (including the ability to do floating point maths), plus various extra utilities and documentation. It is available from good bookshops, or you can order direct – see page 74. ***TS***

IN FROM THE COLD

SOFTWARE

When I'm importing clip art into *PageSetter 3*, the program happily imports *ProDraw* clips into an active box but refuses to load any clip art from the Graphics Editor, which is supposed to be hotlinked. It won't import directly either. I clip what I want and then use it as my brush, but then what? I've tried saving and quitting, as it says in the manual, but the active box in *PageSetter 3* remains empty. I am using an Amiga 500 Plus with Kickstart 1.3 and Workbench 2. I have 2Mb of memory in all.
Gary Brunskill
Sutton
Lancs

First, using Kickstart 1.3 and Workbench 2 together is a pretty silly thing to do, a bit like adding Modeo wheels to an Escort chassis. Either return to using Workbench 1.3.2, or upgrade your Kickstart to the Kickstart 2 ROM.

Right. *PageSetter 3*. I know that the hotlink works, but I've just tried it

continued on page 45

CREATING A SCROLLBAR IN C

CODING

I am programming a little text editor in C, which needs to work only on Amigas with Kickstart 2.04 and upwards. I would like to have a scrollbar with arrows. The scrollbar should be located in the right border, and should look like the scrollbars in Workbench windows. How do I do it? It is easy to make a scrollbar with arrows when you are using GadTools library, but you can't put it in the border, and it does not look like the one on the Workbench windows. The only way to do this is to use Intuition's old gadget routines, which makes the scrollbar look right, but how about the arrows? I could, of course, do my own custom gadgets emulating the arrows, but they are different in Workbench 2.0 and 3.0. I would like to have arrows which look right on both systems. I know that it is possible, because the text editor of *DevPac 3* uses the right kind of arrows on both systems.
Janne Pietarila
Espoo
Finland

This is a tricky one, and I remember being baffled by it myself only recently. The solution is to use BOOPSI gadgets. BOOPSI stands for Basic Object Orientated Programming System for Intuition. Using BOOPSI, you can clone the built-in proportional and arrow class gadgets and use them for yourself, which is precisely what both Workbench and DevPac do. It's quite complex, and I'd certainly recommend that you read the section on BOOPSI in the ROM Kernel Manual on Libraries and Devices, published by Addison-Wesley and availble from any good computer bookshop (ISBN 0-201-11078-4).

Here is a small example of the definition for a scrollbar gadget that will fit in the right hand border of your window. You'll need to patch it into a full program with Includes, but this should at least get you going. You can also create images from BOOPSI, which is where you get your standard arrow buttons from. ***TS***

```
LISTING: BOOPSI EXAMPLE:

static struct TagItem rz_maptags[] =
  {
  PGA_Top, ICSPECIAL_CODE,
  TAG_END
  };

/* Padding so that it all looks great */
#define         TW_VPADLEFT   4
#define         TW_VPADRIGHT  4
#define         TW_VPADTOP    1
#define         TW_VPADBOTTOM 1

void test_boopsi(void)
{
struct Gadget *my_vert_gadget;
struct Window *my_window;

/* Open this window */
if (!(my_window = OpenWindowTags(NULL,
  WA_Left,            0,
  WA_Top,             0,
  WA_Width,           640,
  WA_Height,          200,
  WA_CloseGadget,     TRUE,
  WA_Title,           "My Window Title",
WA_SizeBRight, TRUE,
  WA_DragBar,   TRUE,
  WA_SizeGadget,       TRUE,
  WA_DepthGadget,      TRUE,
  WA_Activate,  TRUE,
  WA_SmartRefresh,     TRUE,
  WA_IDCMP,     IDCMP_CLOSEWINDOW,
    TAG_DONE)))
      return;

/* Create our boopsi gadget */
my_vert_gadget = (struct Gadget
*)NewObject(NULL, "propgclass",
    GA_ID, GID_VERTGADGET,
    PGA_Freedom, FREEVERT,
    PGA_NewLook, TRUE,
    PGA_Borderless, TRUE,
    PGA_Top, 0,
    PGA_Visible, 10,
    PGA_Total, 10,
    GA_RelRight, -(my_window->BorderRight -
TW_VPADLEFT - 1),
    GA_Top, my_window->BorderTop + TW_VPADTOP,
    GA_Width, my_window->BorderRight -
TW_VPADLEFT - TW_VPADRIGHT,
    GA_RelHeight, -(my_window->BorderBottom +
my_window->BorderTop + TW_VPADTOP +
TW_VPADBOTTOM),
    ICA_TARGET, ICTARGET_IDCMP,
    ICA_MAP, rz_maptags,
      TAG_END);

/* Now add this gadget to our window and
refresh it */
AddGList(my_window, my_vert_gadget, -1, -1,
NULL);
RefreshGList(my_vert_gadget, my_window, NULL,
-1);
}
```

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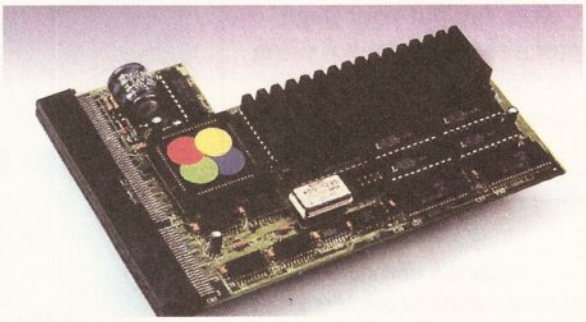
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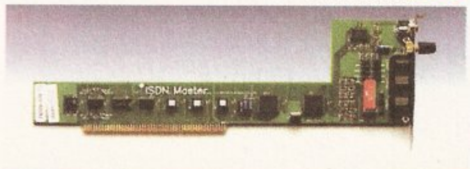


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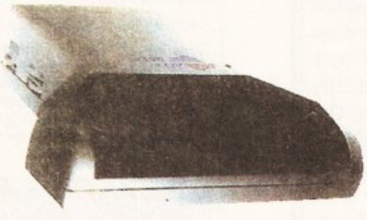
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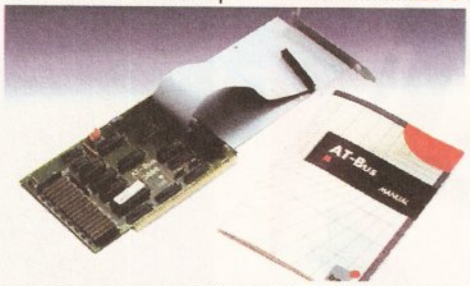
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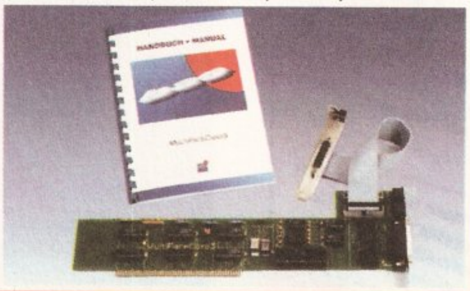


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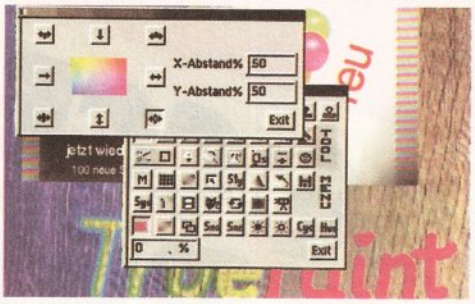
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continued from page 40

again anyway and *PageSetter 3* and the Graphics Editor work together just as described in the manual. Import a bitmap into a box in *PageSetter 3*, send it to the Graphics Editor, make your changes or cut out your brush or whatever, then save it, ensuring that you use the same filename as the original bitmap. When you Quit from the Graphics Editor the bitmap you just saved will be automatically re-imported into *PageSetter 3*, although you'll probably have to adjust the scaling again. If you saved the bitmap from the Graphics Editor under a different filename from the original bitmap filename (the one you imported into *PageSetter 3*), then the hotlink will not work.

Keep in mind that the amount of memory you have is the bare minimum for the graphics and text hotlinks to work, so some failures could be due to lack of RAM. ***JW***

SCAN AND DELIVER!

HARDWARE

I currently own an A500 which I use mainly for DTP, paint programs and other serious software. I feel that to use these programs to their full potential, it would be wise to upgrade to an A1200 – I was thinking of the "Desktop Dynamite" pack with 40Mb hard drive. However, some of my present hardware plugs into the expansion bus which has been replaced by the PCMCIA slot on the A1200. This hardware includes a Naksha hand scanner and an Action Replay Mk III cartridge. I understand that it may be impossible to use the Action Replay cartridge on the A1200, but is there anything I can do about the scanner?

R J Mooney
Ramsey

Very few hand scanner manufacturers actually build their own scanner "heads" (the bit you hold in your hand when you scan an image). Naksha, for example, use exactly the same scanning head as Power Computing – the only difference between them is the interface that connects that scanner head to your Amiga and the software that drives the scanner. It's therefore possible to use your scanner on an A1200 simply by upgrading the interface and software that you use with it. Power Computing sell the interface and the latest version 3.0 of their scanner software as a separate item for just £49.95. Power can be contacted on 0234 843388. For details of the range of Amiga-compatible colour scanners, see last issue's cover feature. *(Amiga Shopper* 32 is available on page 106 if you missed it.) ***JH***

ST PICTURE POSER

GENERAL

A friend has translated some video stills from his video recorder via an Atari ST to disk. How can I translate

A SMALL PROBLEM OF COMMUNICATION

THE FIRST STEPS

COMMS

I've purchased a modem from a friend at a bargain price, but now I really don't know what to do. How do I actually use the thing to get access to a bulletin board? In past issues of *Amiga Shopper* you've mentioned different "terminal" programs, which you say are available for download from most good bulletin boards, but how do you get connected in the first place to get them?

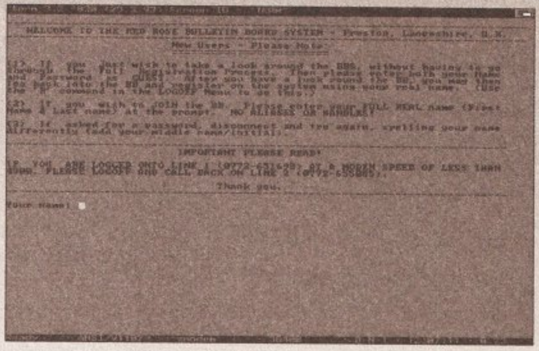
Dr Lawnes
Ryde
Isle of Wight

Comms can seem very confusing at first, especially when you've got a modem and no idea what to do next! Let's walk through it a step at a time.

Terminal software enables your Amiga and modem to talk to each other. Of course if you haven't got any yet you can't get on-line to a BBS to get any, so the answer is to purchase the program from your local Public Domain library – see page 120 for a directory of these.

I would recommend one of two programs. The first is *TERM*, which I use myself and find both comprehensive and easy to configure. *TERM* is a PD program and is updated at amazingly regular intervals. The second option is *NCOMM*, which is a shareware program that has been around for many years and is the the tried and trusted choice for many comms users. To learn how to install these, read the documentation that comes with them – always worth doing; it can save a lot of heartache and sleepless nights later.

Once you have installed the terminal software on your Amiga, you will need to find a BBS number to call. Check *Amiga Shopper's* user groups listing on page 93, flip through the adverts in this issue, or try 01-for-Amiga (☎ 071 377 1358) or the Cheam Amiga Bulletin Board (☎ 081 644 8714). We've mentioned others in the comms column in past issues as well.



If you log on to a Bulletin Board as a new user, you may well encounter a screen something like this...

On calling a BBS for the first time you will be asked to register as a new user. Don't be alarmed – it won't cost you anything (unless you are calling a commercial system like CIX), but the System Operator or SysOp needs to know a bit about the people he allows to use his system. Just follow the on-screen instructions, which will guide you through the registration process. Be honest, especially with regard to your name and details, and you should find that you will be registered as a user within a day or two. From there on you can explore the wonderful world of comms at your leisure. ***DW***



It's not visually spectacular, but TERM is an easy-to-use yet comprehensive comms program – and it's PD!

PLUG IN AND GO

COMMS

I have bought a second-hand IBM modem, model 5858-01, without manual or power supply. Could you tell me if I can get a cheap software package to run it and how much a manual and power supply would be from IBM? I have phoned both IBM and Commodore, who although helpful couldn't come up with any positive answers.

Stuart Williams
Whitstable
Kent

I'll answer the easy bit first. Either of the terminal software programs mentioned above, *TERM* and *NCOMM*, will be suitable. However, I have not been able to find out any information about this particular modem, so really don't know if it is going to be any good to you. The only way to find out is to try it. You should be able to get a power supply from an electronics shop – somewhere like your local Tandy would be a good bet. Take the modem along and they will be able to source a suitable power supply.

Connect the modem to your Amiga and run the terminal software. You can tell if the modem is talking to your computer and vice versa by typing in the Hayes Command **"AT"**, which should get the response of **"OK"**.

If that works, then try connecting to a BBS and see how you get on. Because you don't know the speeds of the modem in question, I would suggest starting off with a 2400 connect and then experimenting with higher (or lower) speeds, depending how successful you were.

Most modems these days are Hayes-compatible – that is, they conform to the standard set by Hayes modems – which makes them all fairly standard to use. If this modem is very old and not Hayes-compatible, I'm afraid you may just have bought a turkey. ***DW***

JARGON BUSTING

BBS – Bulletin Board System. Like an electronic notice-board, only you read from it or write to it over the modem line.

Modem – Acronym for MOdulator / DEModulator. An electronic device that enables your Amiga to send and receive messages over the telephone lines.

this disk information so that I can reproduce the stills for viewing on my Amiga 500? I'd also like to be able to print them out.
Martin Davies
Westerham
Kent

There are a number of public domain programs available for the Amiga that can translate pictures stored in either ST *Neochrome* or *Degas* format to the Amiga's own IFF format. The best thing to do is to have a chat with your friendly PD supplier (see the directory of PD libraries on page 120). They will be able to point you in the direction of the correct PD disk. Better still, has your friend got a copy of *DPaint* for the ST? If so, then simply get him to load his pictures into this program and save them out as IFF on the ST. Then all you need to do is read the disks.

In order to read your friend's ST disks, you'll need a copy of a program called *CrossDOS*. This is built into the Workbench 2.1 upgrade, or if you haven't already upgraded can be bought separately. Or you could try the PD alternative, called *MessyDOS*. *CrossDOS* and *MessyDOS* simply enable your Amiga to read PC-format (that is, MS-DOS) disks. The ST uses a disk format that is almost identical to MS-DOS format, which these programs can cope with – or newer STs can read genuine MS-DOS disks, which would be more reliable for this process. Using *CrossDOS* or *MessyDOS*, simply pull the images across on to your Amiga, convert them to IFF (if your friend hasn't already done so using *DPaint* ST) and then load them into *DPaint* on your Amiga. You'll then be able to print them like any other *DPaint* picture. ***JH***

BLAZING AWAY AT PASCAL

BUYING

I am trying to program in Pascal, but I haven't got a single book about programming it on the Amiga – I can only find books about programming Pascal on the PC. Could you name some books?

I have heard some rumours about an Amiga 5000, with one 68060 chip as a main processor, running at a speed five times faster than the Pentium. (That's 500MHHz, so I doubt it.) It would also have two – yes, two – 68040s for handling video and sound, and 8Mb or 16Mb of graphics RAM, giving 24-bit and 32-bit graphics. It's very disappointing that this is the minimum amount of RAM to use these colours.

I have also heard about a new project between IBM and Atari. They have plans for the ultimate multimedia machine, which would have a 64-bit RISC CPU and a state-of-the-art DSP. What do you think of these rumours?
John Versnel
Avon

Pascal is not a particularly popular choice of programming language on the Amiga, so I'm afraid there isn't that much in the way of choice. The best thing to do is to buy a general book on Pascal and the ROM Kernel Reference Manuals from Commodore, which explain how to program for the Amiga. HiSoft's documentation will tell you how to use Amiga specifics.

As for the A5000, I'm afraid this rumour is *totally* untrue. It was a hoax. One small point: to be five times faster than the Pentium (the new Intel chip, sometimes called the "586", used in the new generation of PC-compatible), the 68060 does not have to actually operate at 500MHz. It could be five times faster and be 100MHz or 50MHz. It is the actual raw processing power that is relevant, not the clock speed of the chip. The 68060 is an exceptionally well designed chip, and at 55MHz (the first version that will be available, some time early next year), it offers over three times the performance of a 25MHz 68040, which means about 50MIPS (Million Instructions Per Second), maybe a little more. Motorola claim that they will be able to make 68060s operating at 100MHz or more, which is more than 100 MIPS – extremely fast; the equivalent of about 150 A600s.

The IBM/Atari project is no rumour: it is the Jaguar games console, designed and marketed by Atari but containing some IBM-made components. The processor is actually 16-bit – the same 68000 chip as in your Amiga – but there is also a custom 64-bit graphics processor called "Tom" and a 32-bit Digital Signal Processor called "Jerry" for the sound side of things. The Jaguar will cost £199 in this country, but it isn't the ultimate multimedia machine by a long way – at least, not yet – just a games console. Its design seems to be just catching up with the custom-chip-based architecture which the Amiga has always had; we'll have to see how well it stacks up against the likes of Commodore's well-received new CD32 console. ***TS***

PS3 WON'T PRINT

PRINTERS

I have installed *PageSetter 3* as per the on-disk instructions. I installed a disk of CGFonts, the clip art on to its own disk and the CanonBJ10 driver on to the PS3Install disk (Disk 1). I loaded

CODING

TOBY SIMPSON DEBUGS ANOTHER READER'S PROGRAM

Author: Matthew Fraser
Program: Text Processor
Language: C
Problem: Routine produces inconsistent results and random crashes

This month we're dealing with a C-related problem. The author runs a bulletin board, and has written himself a small utility for producing statistics on messages left on the BBS. The messages are single files which are read into memory and then processed. The problem is that if the same message is processed twice, the program does not work. Another problem is more mysterious: occasionally, the program crashes when it is about to read in another message.

Both these problems were relatively straightforward to solve, and both are wise lessons to learn if you're programming in C. Wonderful though the language is, some types of bugs hide particularly well in it. To find these, we first need to understand how the program works. From the command line, you can enter the number of a message to be loaded. Then typing a statistic command gets information about that message. You can then get the stats on the same message without having to re-load it, and this is where the problem lies. The first thing the statistics routine does is this:

```
char *text_ptr, *old_ptr;
BOOL done = FALSE;

/* In this snippet, message ▼☛
      points to the text itself */
old_ptr = message;

while(!done)
  {
  text_ptr = strchr ☛
                   (old_ptr, '\n');
  if (text_ptr)
    {
    *text_ptr = 0;

    msg_len = msg_len + ▼☛
                  (strlen(old_ptr));
    if (strlen(old_ptr) > ▼☛
    longest_line) ▼☛
     longest_line = strlen(old_ptr);
    old_ptr = text_ptr + 1;
    }
  else
    done = TRUE;
  }
printf("len = %ld, max ▼☛
line chars = %ld\n", ▼☛
msg_len, longest_line);

return;
```

Quite simply, this scans for the first new-line and replaces it with a zero. This gives us a string of the first line of the message. If this is the longest line, it is remembered, and the length of the line is added to the message total, and so forth, until there is no more message left. The catch is, if you then call this routine again without reloading the message, it shows:

```
len = 0, max line chars = 0
```

on the screen. This is because the **strchr** command, which searches for an occurrence of a particular character in a string, can't find any **\n**'s (newline) any more because they were all removed and replaced by 0's the first time the routine was called.

Watch out for this sort of thing. Always remember that if you're altering data in memory for a particular operation, make sure that you aren't going to affect further operations in the future. This applies particularly for something like this, which actually processes an area of memory.

It would be possible to fix this bug very easily, by adding after the IF line the following line:

```
*text_ptr = '\n';
```

This replaces the newline character.

The next problem was slightly more difficult to track down, particularly because it did not happen every time. I eventually narrowed it down to a rather complex routine responsible for loading a group of messages into memory and remembering where they all were in a specially designed structure. This structure held information about the total number of messages loaded and the amount of memory used, and a linked list of message data. The problem lay in the first line of code in the routine, although this was the last place I looked:

```
if (msg_base->messages_ ☛
```

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

the program and everything worked fine until I came to print. All I get is the message: "Printer driver not graphics capable". I'm stuck. Help!
P Locket (computer moron)
Irlams o'th Heights
Lancs

The reason you get the "Printer driver not graphics capable" message is that although you have copied the CanonBJ10 driver on to the *PageSetter* boot disk, the "system-configuration" – which is the file that tells the Amiga which printer driver to load and what settings to use (among other things) – is still set to load the printer driver called "**generic**". To change it so that the BJ-10 driver is loaded, you need to use the *Printer* program in the **Prefs** drawer of your Workbench disk.

The best thing to do is delete the massive **Clips.lzh** file on the *PageSetter 3* boot disk, create a drawer on that disk called **Prefs**, and copy the **Printer** and **PrinterGfx** programs from the **Prefs** drawer on the Workbench disk (or the **Extras** disk if it's Workbench 2.1) into the new **Prefs** drawer on your *PageSetter 3* boot disk. Now re-boot the machine with the *PageSetter 3* disk, open the **Prefs** drawer and run the *Printer* program.

Select the CanonBJ10 driver. Set **Paper Type** to **Fanfold**. Set **Paper Size** to **Wide Tractor**. Set **Paper Length** (lines) to **63**. Leave **Left Margin (Chars)** at **1**. Set **Right Margin (Chars)** to **80**. Set **Print Pitch** to **10-Pica**, **Print Spacing** to **6 lpi**, **Print Quality** to **Letter**. Now Save those settings to write a new "system-configuration" file to your *PageSetter 3* disk. The important settings from the **PrinterGfx** program can be controlled from the *PageSetter 3* print requester, so you needn't worry about running that prefs program unless you want to make a certain graphics set-up permanent. ***JW***

PUTTING THE BOOT IN

I have been working with AmigaDOS since I traded in my old A500 for a new A1200. I have managed to gain a little understanding of bootblocks, the directory structure of an average disk and so on. The problem I have is with my new copy of *DPaint IV AGA*.

I followed all the instructions on how to decrunch the disk but unfortunately there doesn't seem to be a bootblock on the resulting *DPaint* program disk. Without the bootblock, loading *DPaint* is a very time-consuming task. I phoned Electronic Arts to ask them how to put a bootblock on the *DPaint* disk, but they told me in no uncertain terms that it was impossible. Being a bit of a stubborn chap, however, I thought I'd have a go at installing the disk with a startup-sequence myself. After a few hours I had a boot block on the main *DPaint* disk and a small Workbench. But although *DPaint* now loads fine, *DPaint* only allows me to use the old pre-AGA screen modes.

I think I've missed some files which I should have copied across, but I am absolutely stumped. Why did EA insist on making *DPaint* only useful to hard drive owners? I can't afford such a luxury, so I'd appreciate it if you could tell me what I need to do to get my copy of *DPaint* to access the AGA screen modes.
Jason Hardy
Sandhurst
Berkshire

You were very nearly there, Jason. All you need to do to get your copy of *DPaint IV AGA* to recognise the AGA screen modes is to copy the drawer called **Monitors** that can be found in the **Devs** directory on your Workbench 3.0 boot disk to the **Devs** directory of your *DPaint* disk. Make sure that the file **PAL** is in this directory and then add this line to your *DPaint* startup-sequence:

```
DEVS:Monitors/PAL
```

If everything else is okay, *DPaint* should now access the AGA screen modes. ***JH***

MISSING CHIP

SysInfo tells me that my late-model A500 is fitted with an 8372A Agnus chip. I was under the impression that this device enabled the Amiga to use 1Mb of Chip RAM, but AVAIL tells me I only have 512K, with the remaining 1Mb being configured as Fast. Is there any way to increase this, or do I need to replace the Agnus chip?
Adrian Howell
Swansea
West Glamorgan

There are a couple of possibilities here, none of which suggests some fault in Agnus. First, it may be that SysInfo is reading your Agnus chip incorrectly – but I doubt that. It is more likely that the problem lies with the Trapdoor expansion cards you are using. The A500's trapdoor slot is designed to accept 512K of expansion memory (Fast or Chip depending on the configuration of the board and Agnus fitted). Some manufacturers bypass the normal configuration and offer extended versions, although they are likely to conflict with the standard setup. This is the area you should address first.

You can check if your Agnus is

CODE CLINIC CODE CLINIC CODE CLINIC

```
loaded)          UnloadMessages ▼☛
(msg_base->messages_loaded);
```

Well, it looks harmless enough, but the **UnloadMessages** routine does a lot of memory de-allocation and resource freeing. It also does no error-checking and assumes that the caller is passing it a pointer to a **MsgLoaded** structure which is valid. Here is a snippet of the **UnloadMessages** routines:

```
struct MsgTag mt;

FreeMem(ml->block_ram);

mt = ml->first_message;

while (mt)
  {
  FreeMem(mt);
  mt = mt->mt_Next;
  }
```

There are actually two problems here, but only one is causing the particular bug in question. The first is that if the **MsgLoaded** structure passed in just happened to contain garbage, or incorrect data, the **FreeMem** statements are quite likely to go wrong. In most cases this is likely to cause a **FreeMem twice** guru to occur. One solution is to ensure that you never pass this sort of routine an incorrect structure; the other is to change the first **FreeMem** line to read:

```
if (ml->block_ram)      ▼☛
            FreeMem(ml->block_ram);
```

Quite a harmless change, only this time, if **ml->block_ram** is **0** then **FreeMem** can't be called. What this does not cope with is if the area that is freed was not allocated in the first place!

Before we leave this particular chunk of code, note the two commands in the **while** statement. The second one reads information out of a block of memory that was just freed in the line above. It's possible that another task might grab that memory between the two lines. Unlikely, but possible. The other problem might arise should Commodore ever put proper memory protection in, because the second line will fail because that memory no longer belongs to that task.

Although there have been a couple of things solved there, these were not the actual cause of the problem. The real problem lay in the routine that loaded all this data in the first place and created the structures, because the author was starting with a structure which was created locally on the stack, filling it in, and then copying it to an area of memory. If it went wrong at all, it simply returned, but unfortunately still copied the structure to the destination memory. The result was that all the un-initialised fields (which didn't get filled in because something went wrong) contained garbage, and hence calls to the **UnloadMessages** routine would cause some spectacular problems.

An easy fix to this was placed shortly after the beginning of the routine,; it ensyres that the structure contents are all set to zero:

```
memset(ml, 0, sizeof ☛
            (struct MsgLoaded));
```

This simply clears the entire structure.

The moral of this particular story is that any structure or variable created locally in a routine is allocated on the *stack*. This means that unless you specifically put something sensible in it, it will contain a random value, depending on what was on the stack. This will cause reliability problems. If you want it to be initialised to zeros, you have to do it yourself. Global variables are not affected by this particular problem.

C makes it very easy for you to have bugs like the above. Even experienced C programmers fall foul of this sort of thing. The only way to effectively help reduce this sort of problem is to keep your code well-documented and organised. At least then, if you *do* have a problem, you stand a chance of finding it!

JARGON BUSTING

String – A special kind of C variable, actually created as an array of character elements. Strings are usually passed between functions by passing pointers holding their addresses.

Structure – A class of data storage in C whereby a group of primitive data types - for example, integers, strings and reals - are joined together in a particular order to form a user-defined type.

configured correctly by fitting the standard 512K expansion and testing the amount of Chip RAM available. If this still registers as 512K, then you will need to check Agnus and make some other modifications to the board (they vary according to the revision). It is more likely that you will need to contact the supplier of the extended RAM board and see if there is any way to utilise the extra 512K for Chip memory. I would suggest, though, you are probably better off leaving the machine as it is unless you have a lot of graphics-intensive applications —1Mb of Chip RAM is not necessary for the vast majority of users and you'll usually need a lot of Fast to start enough applications to make it worthwhile. ***MS***

TRICKY POINT



My A1200 has a Power Computing accelerator with FPU and I would like to make more use of it. Am I correct in thinking that applications have to be specifically compiled to use the FPU? I would also like to know if there is any way I can patch operations to use the FPU. Furthermore, do the maths libraries use the FPU, and if not can I replace them with something that does?
Richard Marsh
Birchington
Kent

Generally speaking the FPU should be transparent in operation. Software can sense whether it is present and load the appropriate libraries, but this is "expensive" in code size. Large applications usually opt for manual use of the FPU by supplying two versions – one based entirely on integer maths and another using the FPU. For this reason, you can't patch the libraries – they are the way they are. ***MS***

BREAK THE BANK



I am trying to use my Amiga to enter the Bank of Scotland HOBS system. I can get connected but seem to receive a load of rubbish. I am using *ATalk III* and *Term 1.8* with the correct parity and so on. Do I require extra software to communicate with HOBS? If so what and where can I purchase it?
Gail MacTear
Isle of Lewis
Scotland

The answer is fairly simple: yes, you do need extra software to connect to HOBS. The Bank of Scotland uses a Viewdata system to run HOBS, which is the same as is used by Prestel and other such message boards. To connect successfully you will need to use terminal software that is written for Viewdata use. There are two options available. The first is *RubyView*, which is a commercial program but you should be able to pick it up very cheaply if you can still find any dealers stocking it – it is very long in the tooth now. The second option is a public domain program called *Supertext*, which you can download from most Bulletin Boards with a healthy file area or purchase from a public domain library – see the directory of PD libraries on page 120. ***DW***

FLICKER FIX



Having recently upgraded to an A4000/030, I was looking forward to a flicker-free interlaced screen when using *ProPage 3* and the interlaced screens of *DPaint 4 AGA*. Disappointingly, there is still flickering evident. I have got the A1942 software update which came with the A1942 monitor, which I purchased at the same time as the A4000.
L Long,
Gosport
Hants.

There are a couple of things which could be causing you problems with the flickering. You have to tell Workbench that the flicker-free modes are available before it will make use of them. To do this, you need to have two files, "**DBLPal**" and "**DBLNTSC**", present in your **Devs/Monitors** drawer. To find out whether you have, this is what you do. In your Workbench partition on your hard disk, there is a **Devs** drawer. Double-click on this, and then on the **Monitors** drawer inside it. If it does *not* contain the two files mentioned above, you'll find them in the **Devs/Storage** drawer. Open this drawer and drag them across to the **Devs/Monitors** drawer, and then double-click on them to get them going. You then have to access the **prefs** program "**IControl**". Ensure that the gadget "**Mode Promotion**" is ticked, and then save.

You will also have to access the "**ScreenMode**" preferences, and change your Workbench to a DBL-PAL version of the mode. Then, re-boot your Amiga, and you should have glorious "Flicker-Free-O-Vision"! ***TS***

WHAT'S INSIDE?



I am programming with *DevPac 3* and would like to know exactly what is contained in the structures of so many of the Library commands. For example, InitBitMap requires a pointer to a BitMap structure. Is there a book I could buy that would tell me this information?
John Lock,
Sittingbourn
Kent

You need to buy the Amiga ROM Kernel Reference Manual *Includes and Autodocs*, third edition, published by Addison-Wesley. The ISBN number is 0-201-56773-3. It contains all the structure breakdowns, and also a description of all the Library functions on the Amiga. If you want a proper explanation of these structures though, you'll need another of the ROM Kernel Reference Manuals, *Libraries* (ISBN 0-201-56774-1). This really requires some knowledge of C to understand, but it explains how to use the Library functions, and the structures involved. The *Includes and Autodocs* book costs around £20, the *Libraries* one is a little more expensive, but both are worth their weight in gold if you're serious about programming your Amiga. ***TS***

AMIGA TOO BASIC



I have experienced the following problems using Workbench 3:
1. I am unable to load AmigaBASIC programs directly from the hard disk by clicking on their icons. The message "unable to load your tool Amigabasic" appears. I have to resort to loading AmigaBASIC and then entering the program name manually. Is there a more direct method?
2. The speech facility in *Wordworth* does not work with Workbench 3. Is there any way I can use this useful facility.
Evan Morris
Ripley
Surrey

1. AmigaBASIC is rubbish – which is why Commodore replaced it with the infinitely more useful ARexx in Workbench 2 and above. I suspect this problem has arisen because the AmigaBASIC programs ("Projects") are set with the wrong path for their "Default tool". You can correct this by selecting the offending icon and choosing **Icons->Information....** You then need to enter the path for AmigaBASIC in the area for the Default tool. For example, if AmigaBASIC is in a drawer called **Basic** on the main drawer of your hard drive, you could enter something like this:

```
SYS:Basic/AmigaBASIC
```

2. This is a nuisance. There does not seem any reason why Commodore removed the text-to-speech that the Amiga was famous for (although it seems pretty rough by today's standards). You can reinstate it to Workbench 3 by obtaining a copy of Workbench 1.3 and copying the following files: **Speak-handler** (from the **L** drawer), **Translator.library** (from the **LIBS** drawer) and **Narrator.device** (from the **Devs** drawer). Remember that these drawers are all hidden on Workbench 1.3, so you will have to use **Window->Show... All Files**.

If you are feeling brave you may also want to create a "Mountfile" for the speak device as follows:

1. Drag the icon "**AUX**" from the **Devs/DOSDrivers** drawer to the RAM disk.
2. Rename it "**SPEAK**".
3. Open a Shell window and enter the following command:

```
DELETE RAM:Speak
```

4. Now enter the following command:

```
ED RAM:Speak
```

5. When the *ED* window appears, enter the following short program (called a "Mount"):

```
SPEAK:
Handler = L:Speak-handler
Stacksize = 600
Priority = 5
Globvec = -1
#
```

6. Save and exit from *ED* and then copy the **SPEAK** icon back to **Devs/DOSDrivers**. When you re-boot your machine you will have another device which you can use like a talking disk drive!

From AmigaDOS, the following produces some interesting results:

```
COPY S:Startup-sequence TO SPEAK:
```

Try it and see! ***MS***

JARGON BUSTING

Basic – Beginners' All-purpose Symbolic Instruction Code is a high-level programming language, much favoured by micro-computer users.

FPU – A Floating Point Unit is a chip that works with the CPU to carry out complex mathematical tasks. It speeds up the running of some programs, particularly 3D graphics-based ones.

HOBS – Home and Office Banking Service

ViewData – A page based terminal system, using large character blocks to form graphics and text, as used by Prestel. Now largely redundant.

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WARNING

Due to the exchange rate, or manufacturer's changes or due to current RAM shortage, some prices may alter, either up or down, during the several weeks between going to press and the end of the month of issue. We would ask that prices be confirmed by telephone before ordering.

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HOW TO USE THIS AD

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The best trade-in allowance, extra for peripherals and accessories. Trade in your old machine for a brand new A600/1200/4000/CD32 or even a PC.

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A500s FROM £139
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A600 SD/HD.........from 159	HDs + Controllers....from 179
A3000s.................from 499	GVP HD8 40/52.......209/229
CDTV..................................179	XT/AT BBoard...............50/91
A590 20/40MB....129/159	

OTHER ACCESSORIES - PLEASE ASK.
*Acceptance of pre-V2 machines may be limited

CD32 CONSOLE
SPECIAL

Choose any* 3 CD discs (see software section) for **£59.90** *up to £34.99 RRP each

CD32 SOFTWARE

Over 75 titles specially written for the CD32 should be in stock by Christmas (phone for list), including Syndicate, Zool 2, Jurassic Park, Chaos Engine, Robocod, many of which include a full CD music track alongside the game. About half of existing CDTV titles are compatible. CD32 will also play normal music CDs and CD+G discs

CD32 Console (with Oscar AGA, Diggers +Joypad FREE)
£279

CD32 + FMV Card as above
PLUS FREE MUSIC VIDEO DISC
£465

CD32 Standard warranty is 12 months return to base.
12 months on-site warranty £39.99
Extra 2yrs on-site warranty £69.99

AVAILABLE NOW!
Full Motion Video module for CD32 (with Free Music Video Disc).........................£189
COMING SOON
Floppy drive, Keyboard, Mouse CD32 for A1200

A4000/ 30 & 40

A4000/30: AGA Chip Set + 68030 processor, 68882 25/50 MHz co-processor option, 256,000 colours from 16.6M, scan doubling for flicker free display, Mouse, Amiga 3.5"/1.76 MB 3.5" drive, Hard Drive as below, Amiga DOS 3.0 system and utilities, **Next day on-site warranty**
A4000/40: As above, but featuring the blistering 68040 processor, with full floating point facilities **NOT** EC version. UK models with on-site warranty...**NOT** imports!

TRADE IN AVAILABLE

HD SIZE MB	A4000/30 1+1MB SUBTRACT £70	A4000/30 2+2MB STANDARD VERSION	A4000/30 2+4MB SUPER EXP. VERSION	A4000/40 2+4MB	EXTRAS
80		965		1889	
120		1039		1915	
160		1079 SPECIAL		1959	
240		1149		2139	
340		1219		2299	
540		1479		2459	

1+1MB column: **WARNING** - 1 + 1MB A4000s will not run most serious AGA s/w packages. If required, subtract £70 from 2 + 2MB prices

2+4MB SUPER EXP. column: ADD £80 • ADD £80 • ADD £80 2 + 4 MB version comes with 2MB chip RAM + **one 4MB chip** of fast RAM, for on-board expansion to 16MB. We do not fit two x 2MB chips of fast RAM, which gives on-board expansion of only 8MB.

EXTRAS: Extra 2MB for 2+2 versions £99 • Extra 4MB for 2+4 versions £159 • Microvitec Cubscan 1440 recommended £399.99 • Same day warranty £39.99, extra 2 yrs £99.99

A4000/30 CO-PROs
68882 25 MHz.....................................ADD £79
68882 50MHz.....................................ADD £159
Fitting FOC if purchasing A4000

A500/600/CDTV

STARTER PACK
A Must for new users!
Microswitched joystick, "Get the Most from your Amiga" book, 10 Blank discs, 80 capacity lockable disc box, mouse mat, dust cover, Virus Killer.

A500+ and A600s come complete with mouse, modulator to connect to TV, or monitor lead as required, all cables, manuals, operating discs and utilities

REFURBISHED UNITS ONLY AVAILABLE

	INCLUDED AS STANDARD	ALONE £	PLUS STARTER £	WARRANTY	EXTRAS
A500+ 1MB	-	179.99	194.99	12 months return to base	Extra 1MB £25
A500+ CARTOON CLASSICS	Captain Planet, Lemmings, The Simpsons, DPaint III*	194.99	209.99		
A600 SD 1MB	-	174.90	189.90	12 months at home	Extra 1MB £35 • 2Mb PCMCIA £109 • 4MB PCMCIA £169 • Romsharer £45
A600 SD WILD, WEIRD AND WICKED	Silly putty, F1 Grand Prix, Pushover, Deluxe paint III*, 700 clip art set	194.99	209.99		
A600 HD 20		269.99	284.99		
EPIC PACK PLUS 40	Epic, Rome, Myth, Trivial Pursuit, Amiga Text, Deluxe Paint III*, 700 clip art set	319.90	334.90		
64		349.99	364.99		
85		389.99	404.99		
A600 HD 80	-	365.99	379.99	12 months return base	
120		415.99	429.99		
210		569.99	584.99		
CDTV MULTI MEDIA	Audio Discs/ CD Player, Keyb'd, Fdrive, Mouse, Remote Controller, Caddy, Welcome Disc, Fish Disc	229.99	244.99		Brickette £45
CBM 1084 SD	+ leads	178.90		1 year	PiP Monitor to TV Converter – £99
CBM 1940	Leads. Ideal for AGA	269.99		1 year	
Philips 8833 II	Leads. T & Swivel £10	209.99		1 year at home	
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Citizen 240C	24Pin colour	252.90	262.90	2 year	

Return to base HD versions are SD units fitted with top quality 3rd party drives and come with install disc + full documentation. *DPIII needs 2MB for animation on HD models.

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CHAOS ENGINE, SYNDICATE, PINBALL FANTASIES, NICK FALDO'S CHALLENGE GOLF
ADD £19.99
OR LEMMINGS, SIMPSONS, CAPTAIN PLANET, PLUS D PAINT III & GFA BASIC
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A1200

1200 2MB	269
1200 +20MB HD	379
1200 +60MB HD	439
1200 +80MB HD	469
1200 +120MB HD	509
1200 +207MB HD	549
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**CBM APPROVED HARD DRIVES
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NIGEL MANSEL AGA, TROLLS AGA A COMPILATION PACK
4 (top games)
OR
WORKS PLATINU
(see Home App. Pack below)
OR DESKTO DYNAMITE PACK
Wordsworth 2 AG
Deluxe Paint 4 AG
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Print Manager
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Limited - While Stocks La

SPECIAL
Deskjet 500C and Starter Pack with any Amiga ONLY £285

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Fun and educational for 2 to 11 years
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Noddy's Playtime OR Big Adventure	8 magical learning games at 3 levels, **PLUS** Junior Art pack, keyboard overlay and map
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OR Fun School 2	The "Fun School" suite have won every award going. 5/6 wonderful animated games. 3 to 11 years, specify age.
Fun School 3 or 4 OR ADI Jnr Reading OR Counting	The loveable extra terrestrial entertains 4 - 7 year olds and helps towards achieving National Curriculum levels 1, 2+ 3
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Hobbyte 30 Easy Children's Games Pack	Simple games, or those with very easy levels. Even the youngest will be able to use some of these

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Easy Amos	THE programming language. Wonderful manual is simple and entertaining - ideal for complete novices
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STARTER PACK

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10 blank discs	Make working copies of Workbench and other original applications discs as soon as you get them
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Plus Microswitched Joystick, 80 cap. lockable disc box, Dust Cover

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"THE BUG"	The only joystick **ever** to be given a Gold rating **92% AF,** positive single-handed action, small and lovely!
10 "Hot List" Games The GREATEST!	See listing to the right for current **HOT LIST**, or phone for latest changes. Children's games available.
80 Prog. Hobbyte PD Greats Pack II 10 blank discs, mouse mat, 80 capacity lockable disc box, plus dust cover	Includes top games like Battlecars, Star Trek, Computer Conflict, Megaball, dozens of arcade classics, board classics and 'shoot-em-ups', Utilities, Word Processor, Spreadsheet, Database + Desktop Publisher and the ultimate virus killers - a must for every Amiga owner!

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Deluxe Paint III* with animation + 700 Clip Art pics
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Any Two Hot List Titles

WP with UK spell chck, Thesaurus spreadsheet, 'Sideways' utility, database, graphics + comms module
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THE HOT L

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(previous RRPs u £39.99 each
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Or see packs across

Thunderbirds (7yrs+) ‡ - 9
Silly Putty - 90%+ lots of
Elf/Toki/Puzznic (counts a
Paperboy II ‡
Die Hard 2
Colossus Chess @
Challenge Golf
Battleships classic board g
Graeme Souness Socc
Neighbours
Frankenstein ‡ @
Captain Planet
Silkworm Helicopter @ 9
Tag Team Wrestling
Edd the Duck ‡
Stack Up ‡
Lemmings 92% AF
Round the Bend ‡
Fist Fighter, Sporting Tri
92% AA@
World Cricket
Bart Simpson
Spiderman/Cptn Americ
Rrcade Trivia
Xenon - C+VG Game of the
Blade Warrior - A Power, AF
superb reviews
Arnie
AWARD WINNER
Space Ace, Kick Off, PipeMani
(counts as 2)

‡ PARTICULARLY SUITA CHILDREN (MAY NEED
@ NOT A1200 COMPA
TITLES MAY VARY

*DPIII needs 2MB for animation on

STOP PRESS! Desktop Dynamite AGA pack (see 1200 box) £69 with Amiga £79 alone

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For years a major player in Amiga Mail Order, Hobbyte also boast extensive expertise and experience in specification and support of multi-machine and specialist systems. Hobbyte have been recommended and trained by Commodore and successfully won major orders and support contracts from London Boroughs, MOD, educational establishments etc. We are pleased to be placed on tender lists. This expertise is available to all our customers.

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Microvitec Cub-scan .1782, 17", .27dp, 29-82 KHz horiz. scan ... 889.99
Adaptor for A1200/Microvitec ... 29.99

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NEC 4FG Multi-Sync ... 544.99
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GVP HC8/II 213MB ... 479.90
G Force 030 25MHZ 1MB ... 384.99
G Force 030 40MHZ 4MB ... 684.99
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Extra 2MB for above ... POA
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Fastlane SCSI II controller for 4000 ... 299.90
DKB 40981 SCSI II ... 269.99
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Syquest 88MB internal ... 359.90
Spare Syquest 44MB cartridge ... 69.50
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A4000 170MB ... 169.99
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500

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40MB	139	-
60MB	175	199
80/85MB	179	249
120/127MB	215	329
240/250MB	349	499
INTERNAL CLOCK	POA	

*with cable & disc ADD £14.99 for Hobbyte fitting
**Including FREE courier collection & delivery

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FREE V lab Framegrabber with Harlequin Plus
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AMAZING PRICE!

PICASSO 24 BIT GRAPHICS CARD + FREE Personal Paint Card Lite ... **£324.99**

PICCOLO 24 BIT GRAPHICS CARD
16.7 million colours, on-board blitter, 1MB exp to 2MB video RAM, fully programmable resolution, double buffering + multiple screen + AREXX. support. Supports leading graphics packages/applications. With FREE TV Paint Jnr ... **£379.99**

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Similar to Piccolo but with 4MB video RAM, programmable resolution to 1600 x 1280, built -in video controller inc. 110MHz clock. With FREE TV Paint Jnr.

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Take 24 bit animations from disc or other storage devices and replay in real-time through the Amiga! Use integrated genlock to overlay Amiga graphics for sophisticated titling and special effects, to produce stunning promotional/training videos, or games with live video footage. Near SVHS quality, 16.7M colours, MPEG tools + library functions, 25 frames/sec playback.
YC Output module for Peggy ... £129.99
MPeg encoder option for Peggy ... £349.99

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ALSO WITH IMAGINE SOFTWARE
IF YOU HAVE PURCHASED OPALVISION, YOU MAY HAVE RECEIVED VOUCHERS AGAINST THE FOLLOWING NEW PRODUCTS., WHICH WILL BE ACCEPTED BY HOBBYTE IN PART PAYMENT
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Scan Rate Converter for OpalVision WITH VOUCHERS ... 647.99
Retina 24 bit graphics card + 1MB + VD Paint ... 329.00
Retina 24 bit graphics card + 2MB + VD Paint ... 395.00
Retina 24 bit graphics card + 4MB + VD Paint ... 489.00
V lab 24 bit real time digitiser 1200/600/500 ext ... 334.99
V lab 24 bit real time digitiser 1500/3000/4000 int ... 289.99
V Lab 4000/3000 int SVHS ... 334.99
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GVP 40/4 for 1500	945.99	Emplant	245.90
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Power Hand Scanner, 400 dpi, 64 Greyscale, Powerscan software ... 88.99
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OCR software for Power Scanner ... 48.50
Power Colour Hand Scanner ... 219.49
Sharp JX 100 A6 Scanner + scanlab s/w up to 18 bit ... 469.99
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10 Blank DS/HD discs	6.99	50 Blank DS/DD discs	17.99
A520 Modulator	29.99	50 Blank DS/HD discs	27.99

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A500 512k Ram Exp+Clock	21.99	PC1208 bare	55.90
A500+ 1MB exp	29.99	PC1208 2MB	137.90
A500+ 2MB, exp. to 8MB	149.99	PC1208 4MB	214.90
A601	37.99	PC1208 8MB	396.90
A600/1200 2MB exp (card)	137.99	MBX 1200 bare	54.90
A600/1200 4MB exp (card)	169.99	MBX 1200 2MB	134.90
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A500 Rom Sharer 2.04	38.95	68882 25MHz for MBX/1208	79.90
A600 Rom Sharer + 1.3	49.95	68882 50MHz for MBX/1208	159.90
A2065 Ethernet Card	229.95	CBM 2.1 upgrade kit	74.99
Blizzard 1200 4MB	159.90	Amitec 16bit 0MB exp for 1200	76.90
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PRINTERS

2YR WARRANTY WITH CITIZEN

	ALONE	WITH STARTER PACK
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Star LC20	119.90	
Citizen 90 mono*	144.49	
Citizen 90 colour*	154.49	
Citizen 124D	176.99	
Star LC 100 9 pin col	149.99	
Panasonic KXP2180 col	159.90	
Star LC200 col	184.99	
Star LC 24-20 II	218.49	
Star LC 24-100 24 pin	173.49	
Star LC 24-200	209.99	
Star LC 24-200 col	248.49	
Panasonic KXP 2123 col	209.99	
Epson LQ 100	179.99	
Epson LQ 570	259.90	
Epson LQ 870	469.90	
Epson LQ 1170	569.90	
Citizen S200 24*	184.99	
Citizen S200 24 col*	199.99	
Citizen S240*	187.90	
Citizen S240C col*	233.90	
Citizen S24x col*	325.90	
Star LC24 - 30 Col	218.90	
Star LC24 - 300 Col	275.90	
Citizen col Note. Printer III	POA	

Welsh Character Set available on request for Citizen Swift 90,200 & 240

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Epson Stylus 800	249.90	
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HP Deskjet 510	249.90	
HP Deskjet 500col§	295.90	
HP Deskjet 550C§	495.90	
HP Deskjet 1200C	1249.90	
Canon BJ10SX Port	189.99	
Canon BJ 200 (WITH FREE SHEETFEEDER)	295.90	
Canon BJ 230 A3	339.90	
Canon BJ 330 A3	449.90	
Canon BJ 300	359.90	
Canon BJC 600 Col	559.90	
Star SJ 48	198.99	
Star SJ 144	519.90	
LOWEST PRICE LASER QUALITY OKI OL 400e LASER	509.90	
CITIZEN LASER 6000	POA	
Panasonic KXP 4410	539.90	
Panasonic KXP 4430	689.90	
Star LS 5 laser	569.90	
HP Laserjet 4L	569.90	
HP Laserjet 4	1289.90	
Star LS 5ex 5ppm 2 bin	659.90	
Sharp JX 9500 9ppm	599.50	

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If you've admired the saturated colours of the Mitsubishi and other thermal wax printers at exhibians, but couldn't afford the £4000+ price tag, the Fargo Primera is the printer you're looking for. Less than a third of the price of the nearest rival,
Primera offers:
• Photo-quality, rich bright colours
• Cost per page less than ink jet.
• Up to 4 times faster than ink jet
• A4, transparencies + T-shirt transfer paper printing
Complete with Amiga driver (Windows or Mac driver if preferred) and Amiga lead. ... **£995.90**

§Studio driver/Utility (WB 2 & above) highly recommended ADD £39.95

STARTER PACK: 500 Sheets A4 paper, Amiga to printer lead, Universal Printer Stand & Driver * with Print Manager

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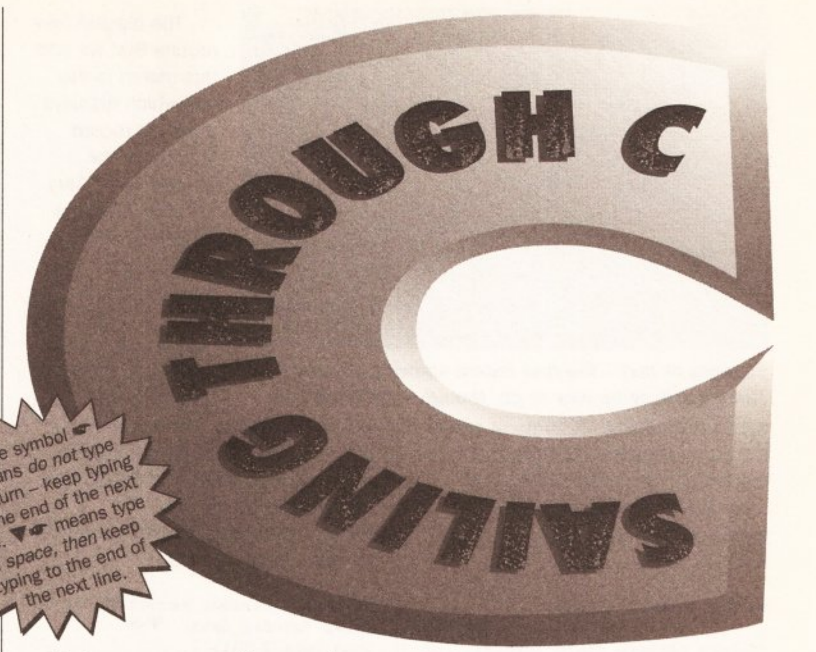
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This month Toby Simpson gets our Address Book program up and running in the Amiga's window environment.

AMIGA SHOPPER IT'S ON THE DISK

The symbol ☛ means *do not* type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

Last month in our Address Book programming project, we integrated all of our user interface code into the main module, and dealt with some of the things that we are going to have to do in order to get the Address Book running from within the window. This issue, we'll actually be doing that, and getting our pretty window displaying record contents, as well as enabling us to edit existing records by simply clicking in the appropriate string gadget, entering the new field contents, and pressing <Return>. All the source code you need this month is on the cover disk, so load it up and let's get going. We've even given you DICE itself to load it into! (For how to get started with it, see page 12.)

DEALING WITH BUTTON PRESSES

We've already got the code written to enable us to detect that a button has been pressed. Last month's program simply put the button ID number on the screen so that we could see that something was happening. We can perform actions on this number in a variety of ways. One is to use **IF** statements, but by far the most efficient way of testing multiple values like this is to use the **switch()** command. We've already looked at **switch()** in the past, but this time we'll be using an additional feature. Our five control buttons – **NEXT, PREV, SAVE, GOTO** and **SEARCH** – will need to be dealt with separately, but the other nine represent fields in our current record, so we could deal with them easily without the need for nine separate **CASE** statements:

```
switch(gad_pressed->GadgetID)
  {
  case BTN_PREV:
    /* Previous code goes here */
    break;
  .. repeat for BTN_NEXT, ▼☛
SAVE, GOTO and SEARCH...
  default:
    /* If the above cases didn't
get it, it goes to the default
bit! */
    break;
  }
```

What is happening here is that the five control buttons are handled at the top of the program, and by a process of elimination anything else must be one of our string gadgets, so we use the "**default**" statement, which basically means "if none of the 'case' statements were used, do this bit". It can be quite handy in a number of circumstances, including error detection.

Since we can only ever have one record shown at any one time, what we'll do is create a few global variables, which dictate what's on screen:

```
BOOL   record_changed  = FALSE;
   /* Flag to indicate we made
changes */
long current_record     = -1;
   /* Current record, -1 if none
yet */
long total_records      = 0;
   /* Total records in file */
char record_data[RECORD_LENGTH];
   /* The actual record itself */
```

We'll use our first one, **record_changed**, to indicate if the record on screen currently has unsaved changes. In future issues, we'll use this to show a requester saying something like "Data has changed – are you sure you want to move to another record without saving it?" (We'll be dealing with requesters next month.) The next variable, **current_record**, is used to indicate the actual record number that is shown, or –1 if nothing is shown currently. The third, **total_records**, is calculated at the start of the program and tells us how many records there are in our file. It's quite easy to calculate. A better way to do it than this, however, is to hold this sort of information in an index at the start of the file. However, we're going to do it the easy way. We can simply open the file, find out how long it is in bytes and divide this number by the length of each record, and hey-presto, the number of records:

```
long total_records;

/* Open our file */
if (!(file_channel = Open ☛
("addresses", MODE_OLDFILE)))
  return NULL;

/* Calculate total records */
Seek(file_channel, 0, ☛
OFFSET_END);
total_records =
(Seek(file_channel, 0, OFFSET_ ☛
CURRENT) / RECORD_LENGTH);

Close(file_channel);
```

This enables us to put some basic error checking on the **NEXT** button to prevent the user from going off the end of the file. We're using a nice feature of the AmigaDOS **Seek()** function that it returns the position where it *was* in the file before you called **Seek()**. So if we seek to the end of the file, and then seek nowhere at all (**OFFSET_CURRENT**, zero bytes), we get the length of file.

Our last global, **record_data**, holds the actual data for the current record itself. We will pass this to the "**write_record_data**" and "**read_record_data**" functions we wrote several months ago.

With this lot all sorted, we can easily now implement the **NEXT** and **PREVIOUS** button operations. **PREVIOUS** is really easy: we can simply reduce the current record counter by 1 so long as it is greater than zero, like this:

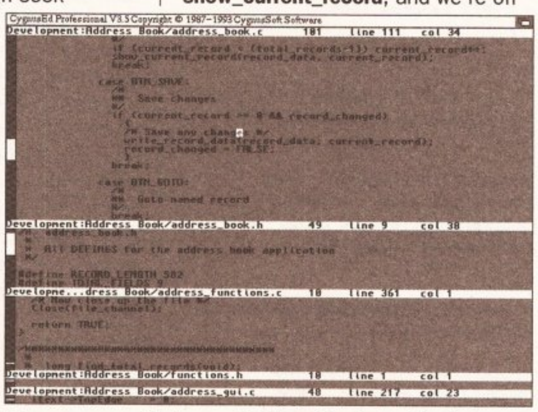
```
if (current_record > 0) ▼☛
  current_record–;
```

When we've done this, we can then update the display by calling a new function we'll write in a while called **show_current_record**, which takes a pointer to where the record data will be and the record number itself.

Because we're reading in the total number of records, the NEXT button can be implemented in a similar easy way:

```
if (current_record < ▼☛
(total_records-1)) ▼☛
current_record++;
```

Then we make a call to **show_current_record**, and we're off and running.

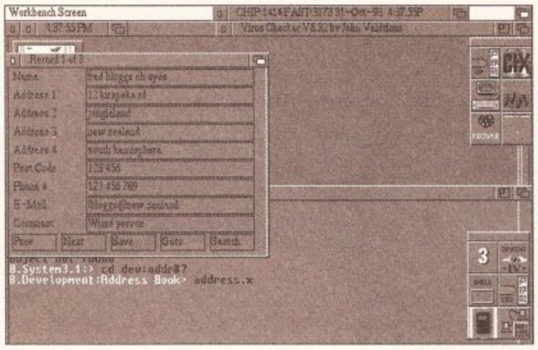

The source code for our Address Book application being edited. You can just load it off the cover disk!

The other important button to implement is the **SAVE** one. This button will save any changes that you have made to the current record. Since we keep tags on both the record number and whether there have been any changes, this is also now very simple to implement – particularly since we've already written a routine to save a named record to disk, "**write_record_data**":

```
if (current_record >= 0 ▼☛
&& record_changed)
  {
  /* Save any changes */
  write_record_data(record ☛
_data, current_record);
  record_changed = FALSE;
  }
```

The first thing we're doing here is checking to see if there is a record to save, and if so, whether there have been any changes to save. Remember that we set **current_record** to –1 if there is no record displayed, and we set **record_changed** to **TRUE** (it's a boolean variable) if there are any changes. So, if the record is 0 or higher and there are some changes, we want to save it. We're using the **and** function, "**&&**", to do this. If there is something to change, we call our **write_record_data** routine to write the record straight to disk, and then set the **record_changed** flag to **FALSE**, because there are no longer any unsaved changes.

As you can see, it's all nice and straightforward. Perhaps the most complex bit that we'll have to do with our button result code is to deal with



Success at last – the first record showing on screen! There's still some way to go, though – stick with us...

the user pressing <Return> in one of the string gadgets, meaning that they've changed something. This code sits in our default: part of the gadget switch statement. It looks a little like this:

```
record_changed = TRUE;

/* Copy changed field across... */
field_offset = record_data;

for (loop = 0; loop <
gad_pressed->GadgetID; loop++)
  field_offset = field_
offset + field_lengths[loop];

strcpy(field_offset,
((struct StringInfo *)(window
_gads[gad_pressed->GadgetID]
.SpecialInfo))->Buffer);
```

The first thing we're doing is setting our **record_changed** flag – because there have now been changes. We then have a character pointer which we set to be equal to the start of the current record. We then want to find the offset into the record where the field to change is. We find this in the above "**for(...)**" loop. If, for example, the user pressed <Return> in the third line, then the offset would be equal to the lengths of the first *two* fields from the start of the record. So, since our gadget ID is equal to the field number, the above loop does the trick nicely.

Then we have a rather complex looking **strcpy** command. We've looked at **strcpy** before – it means **string copy**, and it works like this:

```
strcpy(destination, source);
```

Our destination is the calculated offset, and the source is the gadget data buffer which Intuition looks after. This updates the internal copy of the record according to changes. If we then pressed on our **SAVE** button, it would pick up that there are changes and save the data for us.

Because we have not yet integrated the "Create New Record" function into the program, this month the **SEARCH** button is temporarily tied to the original **create_record()** routine we wrote all those months ago. This at least allows us to add new records to our file and display the results.

The biggest new routine that we add this month is the one which displays a named record directly on the window itself. This is called after the **NEXT** and **PREV** buttons are pressed, and in future versions will also be used after **GOTO** and **SEARCH** to update the window contents. We mentioned it briefly above when we talked about the actions of **NEXT** and **PREV**, and it's going to be called **show_current_record**. The prototype for this function is this:

```
BOOL show_current_record
(char *record_data,
long record_id);
```

We pass it a pointer to where the record data is to be placed, and the record number we want to show. We already have these values defined, "**record_data**" and "**current_record**". Let's have a little look at **show_current_record**:

```
char  *field_offset;
int   loop;

/* Attempt to read the named
record */
if (!(read_record_data
(record_data, record_id)))
 return FALSE;

/*
** Before we alter the gadgets, we
must remove them
*/
RemoveGList(addr_window,
window_gads, -1);

/*
** Now go through record, copying
fields to string gadgets.
*/
field_offset = record_data;

for (loop = 0; loop <
TOTAL_FIELDS; loop ++)
 {
 strcpy(((struct String
Info *)(window_gads[loop]
.SpecialInfo))->Buffer,
field_offset);

 field_offset = field_offset
+ field_lengths[loop];
 }

/*
** Now they are updated, we can
add them back and refresh the
window
*/
AddGList(addr_window,
window_gads, -1, -1, NULL);
RefreshGList(window_gads,
addr_window, NULL, -1);

/*
** Now show something sensible on
our window title
*/
sprintf(window_title,
"Record %ld of %ld",
record_id+1, total_records);
SetWindowTitles(addr_window,
window_title, (UBYTE *)~0);

return TRUE;
}
```

This introduces a whole load of new **intuition.library** functions which we have not used before. This is what the function does:

1. Read the record data into memory. Return FALSE if it was unable to.

2. Temporarily remove our gadgets from the window. The manuals state that it is illegal to operate directly on the gadget structures when they're still attached to the window.

3.Loop around, setting each gadget string buffer with the appropriate field content. Note that we're using the same procedure we used before, to set field contents when the user pressed <Return> inside one of the string gadgets.

4. Add the gadgets back to the window, and tell Intuition to refresh them so that they look right.

5. Change the window title to show which record we're showing and how many there are in total. This simply looks nice and gives the user some idea of what is going on.

Part 1 we've already done – we wrote a **read_record_data** some months ago – so we just call that with the appropriate parameters. The new Intuition functions we're using are responsible for the removal, updating and adding of gadgets to windows. They are very versatile, you can actually add or remove single gadgets, groups of gadgets, all sorts of things. It's best to consult the AutoDocs for the function to find out exactly what it can do. Finally, in part 5 we set a new window title.

CAUTION NOTE: This is a common error! Note that the **window_title** string is a *global* variable. This is important. If we were to accidentally declare it locally to this function, then everything would go horribly wrong as soon as we exited it – because any local variables are instantly eliminated. The next time Intuition chooses to update your window title, for example, your window becomes unselected, and then it will look to an area of memory which no longer contains any useful data. The result is a corrupted title, which looks messy. Do remember that anything that needs to remain intact after a function is used should either be correctly allocated in memory or declared as a global variable.

All that remains, then, is to integrate this lot properly into the program and make the necessary changes to the prototypes file to add our new function definitions. Also, we're adding some **#defines** for the control buttons into **address_book.h.** A few variables have now had to be declared as external too, particularly the **field_length** array, so that other code modules can access them.

COMPILING AND USING THIS MONTH'S LISTINGS

The current source is on this month's cover disk, and was compiled, tested and run using DICE 2.06.21, freeware release. You will need the Commodore Includes in order to compile the program. If you need to get hold of the Includes, then send off for Commodore's excellent Native Developer's Toolkit. The address is:

Developer Support, Commodore Business Machines (UK) Ltd., Commodore House, The Switchback, Gardener Rd., Maidenhead, Berks., SL6 7XA

Send a cheque for £25 sterling made payable to "Commodore Business Machines (UK) Ltd.", and ask for the "latest Native Developer's Toolkit". The newest version of this toolkit, for Kickstart 3.1, should be available by about now. The Toolkit comes with the Includes, plus autodocs on disk, together with stacks of example code and useful debugging and programming utilities. Well worth the money.

Next month we'll be looking briefly at ARexx as a way of providing power to a program, then neatening things up by adding requesters to tell us what is going on, and then we'll explore the integration of creating a new record into the GUI. AS

Toby Simpson is available for electronic mail on CIX as "toby" and over the internet at "toby@cix.compulink.co.uk".

JARGON BUSTING

AutoDocs – The autodocs describe the operation of each of the Amiga operating system's individual functions. You can buy a book with this lot in, and they're also available on disk with Commodore's Native Developer's Toolkit.

GUI – Graphic User Interface. The term used to describe all the buttons, icons and windows on the screen, as a way of controlling programs. The Amiga's GUI is named Intuition.

Greased lightning!

Can it be true? A programming language with which you can produce super-fast games and real Workbench programs? Simon Green gets Blitzed by Blitz Basic 2.

Long ago, there was only one version of the BASIC language for the Amiga. It was called, appropriately, "Amiga Basic" and came free with Workbench. To many people who had upgraded to the Amiga from an old 8-bit machine, it seemed incredibly powerful – and there weren't even any line numbers! Alas, it was discontinued with the advent of Workbench 2, and, on a lot of tasks, it was painfully slow.

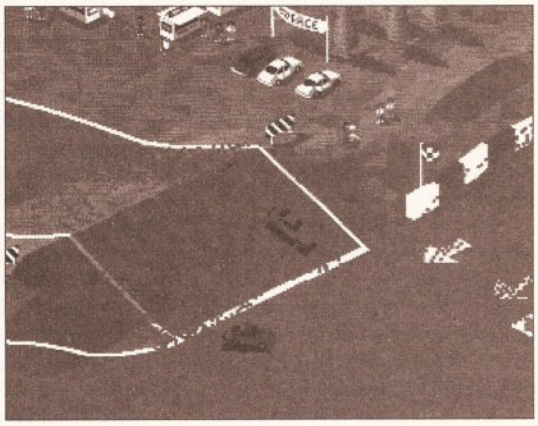
Next came HiSoft and GFA BASICs. These were much faster and more reliable than old Amiga Basic, and were great for writing OS-legal programs, but still didn't allow much control of the custom graphics hardware that had made the Amiga such a successful machine. There didn't seem to be any way in which the average user could create fast-moving graphics of the sort seen in commercial games, without resorting to learning C or assembly language.

Then AMOS arrived. It offered a full version of BASIC, but ditched the Amiga's Operating System in favour of its own fast, hardware-level routines. Now even beginners could write programs with scrolling, moving sprites, sound effects and music.

Now there's Blitz Basic 2. This newcomer claims to be a real programming language with enough low-level control to make high-speed games a reality. Its forerunner Blitz Basic 1 was never truly released in the UK and was only really used by a dedicated cult of Blitz programmers. Blitz 2, however, deserves to reach a much larger audience.

A SPEEDING BULLET

So, how much faster is Blitz Basic 2 than AMOS? To test the comparative speeds of the two languages, I devised a simple benchmark program. The benchmark consists of drawing a number of bouncing balls on the screen. Each ball is an eight-colour, 16 x 16 pixel graphic (a "bob" in AMOS, a "shape" in Blitz). The screen is double-buffered to eliminate flickering, and the balls had to preserve the background graphics, as is usual in arcade games. The task was to see how many balls could be drawn and animated in a single video frame (that is, in a 50th of a second). I found that Blitz Basic could manage about 16 balls per frame, but, try as I might, I couldn't push more than about 8 or 9 balls per frame out of AMOS. However, I discovered that if I disabled multitasking using the **"Multi Off"** instruction from the Craft extension, AMOS could achieve the slightly more respectable figure of 11 balls per frame. But, I also found that if I switched off the run-time error-checking in Blitz Basic, I could obtain a frankly obscene 30 balls per frame!



SkidMarks – a top-class racing action game, to be sure, but could it have been written in AMOS?

Obviously these figures aren't necessarily representative of the speed of the languages as a whole, and I don't claim these are the best possible values, but it does give a rough indication of the performance differences you can expect to find.

The first important thing to realise about Blitz Basic is that is a compiled-only language. Unlike AMOS, which is based on an interpreter, all Blitz programs must be compiled (that is, converted into machine code) in order to run. This has the obvious advantage that you don't need to buy an additional compiler in order to produce fast, stand-alone programs.

Blitz Basic being compiled-only is not as much of a disadvantage as it may sound, since Blitz comes complete with an interactive run-time debugger. This provides most of the same functionality provided by AMOS's direct mode and monitor program, except it operates directly on the compiled program. You can stop the program at any point, and the debugger will open a small screen displaying the source code to the currently executing statement, plus a few lines either side. You can then step through the program a line at a time, examine the contents of variables and even execute commands directly. This can be an invaluable aid when developing and debugging programs.

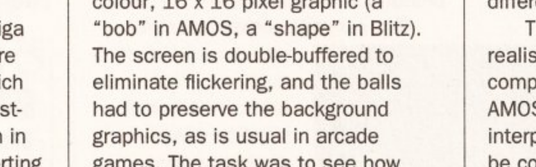
Blitz Basic can operate in two modes – Amiga mode and "Blitz" mode. Amiga mode is the default and enables you to write conventional programs that make use of the operating system routines to open screens, output text and draw graphics. This is the mode you would use to write proper, multi-tasking Workbench applications. However, to obtain maximum performance, you can use "Blitz" mode, which disables multi-tasking and takes over the machine completely. This allows full and direct control over the Amiga's hardware.

At first glance Blitz Basic seems a much lower-level language than AMOS – that is, closer to the level of the machine. For example, to open a screen in AMOS, you simply specify the number of colours you need, and "LowRes" or "HiRes" to choose the resolution required. In Blitz, however, you need to set the correct bits in the **viewmode** parameter to select the resolution, and specify the number of bitplanes required.

Drawing bobs (blitter objects) and double-buffering (which is essential for smooth animation) in Blitz are also much more involved than in AMOS. For example, if you want to open a double-buffered screen in AMOS and draw some

VISITING UNCLE TED

Most of your time with Blitz Basic will be spent in Blitz's integrated editor/compiler environment – *"Ted"*. The edit/compile/execute cycle is very fast – you just edit your program, select **"Compile/run"** from the menu, and in a short while (depending on the length of your listing, obviously), your code is up and running. In fact, Blitz often seems to compile and run your program in the time it would take the AMOS interpreter to just test it! As you'd expect, programs can also be compiled to disk for later execution.



Blitz's integrated editor and compiler, Ted. You'd better get used to looking at this screen...

As an editor, *Ted* is perfectly usable, if a little quirky. I was particularly annoyed by the way pressing <Return> inserts a new line below rather than above the current line, and the fact that it's impossible to delete a line by using <Backspace> or <Delete>. And it seems to refresh the screen more than you would have thought was strictly necessary. Unlike the AMOS Professional editor, *Ted* doesn't allow multiple edit windows to be opened, which can make cutting and pasting code between programs a bit tedious. But I'm probably just being picky – you can always use your own favourite text editor instead.

Ted does have some nice features – it automatically highlights recognised keywords in a different colour, and you can get it to list the main labels in your program in a column on the right-hand side of the screen for quick and easy access to different sections of the code. The syntax of some of Blitz's commands can be a little complex, to say the least, but fortunately *Ted* includes a simple on-line help system that can give a list of the parameters of any keyword. It's still not really ideal for novices, but it certainly helps.

bobs on it you just use "**Screen Open**" to open the screen, followed by "**Double Buffer**" to double-buffer it, and then just use the "**Bob**" command to draw your bobs. In Blitz, you have to allocate two bitmaps, set up a "slice" and manage all the double-buffering and the drawing and erasing of the objects yourself (using Blitz's "**Blit**" commands). The advantage of this approach is that it is faster and gives you much more control over what is actually happening.

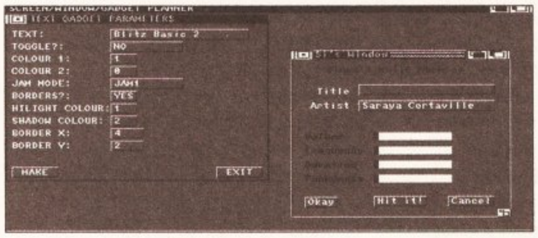
It's also good to see that Blitz allows IFF samples (8SVX format) to be loaded directly, which is still a big omission from AMOS. There is even a "**DiskPlay**" command that enables long samples to be played directly as they are loaded from disk.

A more unusual feature is that Blitz also operates as a fully-functional assembler. You can freely mix 68000 assembly language instructions with BASIC commands. This means that experienced programmers can replace time-critical routines in their programs with faster machine-code equivalents. It is even possible to set up your own interrupts that will automatically call a specified procedure on a regular basis. The compiler/assembler also provides all the features you'd expect, including conditional compiling and macros. In fact, in some ways Blitz Basic 2 feels more like a high-level assembler than a compiler as such.

Blitz also borrows more than a few features from the C programming language. Probably the most interesting of these features are "NewTypes". These are the Blitz equivalent of C's "**struct**" data structures or Pascal's "**Records**". NewTypes enable new data types to be created by grouping together a number of different basic types. A NewType can be thought of as a record containing a number of different fields, each of which can hold a different item of data. This means that rather than using several different arrays to store all the data in your program, you can use arrays of NewTypes instead. Neat.

Masochists will be pleased to hear that Blitz also includes a pointer type. Simply put, a pointer is a variable that holds the address in memory of an item of data (it "points" to the data). Pointers are used extensively in C to pass references to data between functions. So now you too can confuse people (and probably yourself) just as much as those clever C programmers do. On a more serious note, NewTypes and pointers also provide a useful method of representing and accessing the Operating System's data structures and libraries from Blitz Basic.

Another novel feature is built-in support for linked lists. Linked lists are an alternative method of storing data to conventional, linear arrays, and a more efficient one. They make some types of list processing much simpler and faster than if arrays were used. Lists in Blitz are allocated in a similar way to arrays, using the "**Dim List**" command. Items can then be added and deleted from the list very easily using single commands. The system automatically keeps track of the current item, and you can step through the list using the "**NextItem**" command.

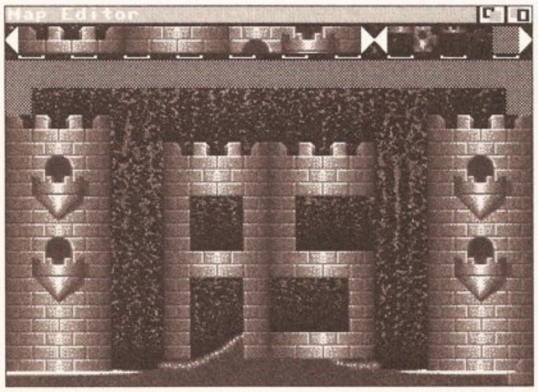


Blitz Basic's IntuiTools utility enables you to design Intuition interfaces with your mouse, without worrying about any of those complicated commands.

These features together make Blitz Basic a much more concise, flexible and elegant language than some other versions of BASIC.

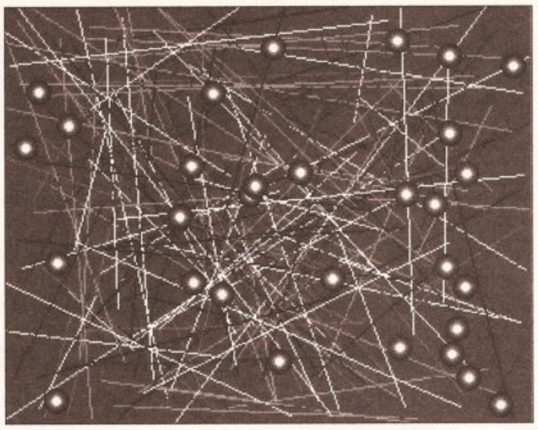
PROOF OF THE PUDDING

One of the other big selling points of Blitz Basic 2 is that it provides full support for the Amiga's graphical user interface, Intuition. Finally it is possible to write proper, multitasking Workbench applications in BASIC. Blitz includes commands for creating screens, windows, pull-down menus and all those gadgets we all know and love. The latest version of Blitz even includes support for ARexx, which enables Blitz to communicate with other programs, as well as a facility called BRexx, which allows you to control other Intuition programs by fooling the system into thinking that the mouse or keyboard is being used.



The Blitz map editor enables you to piece together screens from a selection of small graphic tiles, saving time and storage space. I used to love Lego too...

Other interesting features include support for playing IFF *(Deluxe Paint)* animations, *MED* music modules, and synthesized speech using the Amiga's narrator device. However, support for AGA graphics is not yet complete. It is possible to open AGA format screens under Intuition in Amiga mode, but although it is possible to set up 24-bit palettes in Blitz mode, AGA screens and shapes are not yet feasible.



With Blitz Basic 2, you can animate this many bouncing balls every 50th of a second. Wow!

Of course, in addition to these more unusual features, Blitz Basic also includes everything else you'd expect from a modern version of BASIC, including string handling, file input and output, procedures, functions, and all the control structures you could ever need, and probably a few you don't.

The package comes complete with a selection of ready-compiled tools, including an Intuition interface designer called "IntuiTools", a Map editor called "MapEdit", and "ShapesMaker", which is for grabbing shapes from IFF pictures. None of these appear to be documented anywhere, but it doesn't take long to figure out how to use them.

My only real concern about Blitz is that it seems to be quite unstable on some machines. I managed to crash it several times just trying to run the example programs. However, you have to remember than Blitz is still a relatively young product, and I'm sure that in time these bugs will be exterminated. The only other criticism I would make is that the documentation, although quite professionally produced, is somewhat lacking in details and explanations in places.

Of course, the biggest testament to the power of Blitz Basic is the quality and speed of the software that has already been written using it. Sure, there's been a few nice programs written in AMOS (most notably a certain game called *Extreme Violence)*, but nothing that really rivals *SkidMarks, Defender* or *Insectoids 2* in terms of professionalism and playablilty. And with Blitz's Intuition capabilities, there's no reason why we shouldn't see some groovy Workbench utilities written in it as well.

I wouldn't recommend Blitz Basic for beginners or people of a nervous disposition. It is, however, ideal for frustrated AMOS programmers who reckon they've pretty much pushed AMOS to the limit, or for people looking for a proper, structured version of BASIC that can be used to write real Workbench applications. And it's also a very good stepping stone on the road to pure assembly programming. AS

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CHECKOUT BLITZ BASIC 2

Features
●●●●●●●●●○
You name it, Blitz Basic has got it.

Documentation
●●●●●●●○○○
Adequate, but a bit incomprehensible in some places.

Ease of Use
●●●●●●●●○○
A nicely-integrated programming environment, but the language itself takes a bit of getting used to.

Performance
●●●●●●●●●○
Unbelievably fast in Blitz mode – only assembly language would be quicker.

Value for Money
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Excellent. The price compares well with other programming language packages.

Overall rating
●●●●●●●●●○
The best implementation of BASIC since AMOS, but not recommended for beginners.

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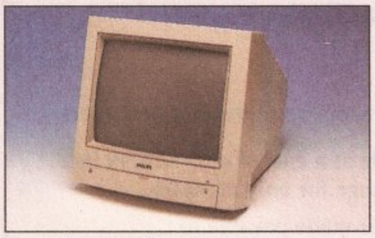
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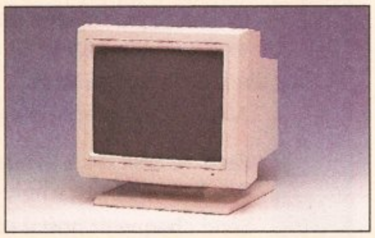
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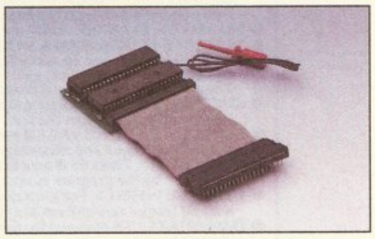
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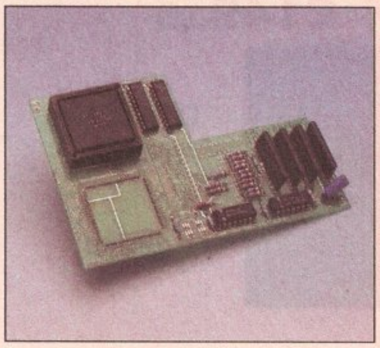
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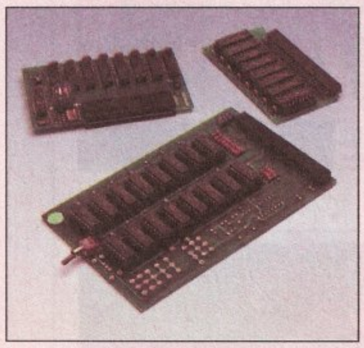
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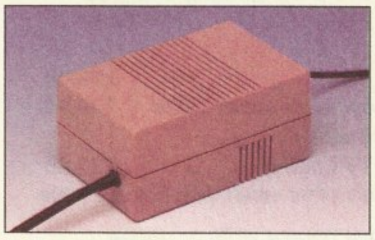
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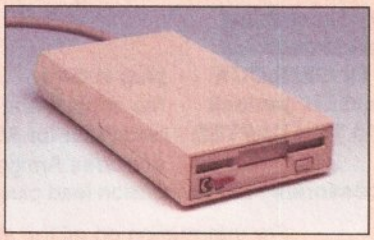
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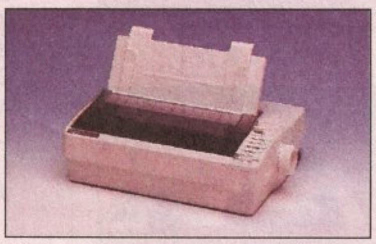
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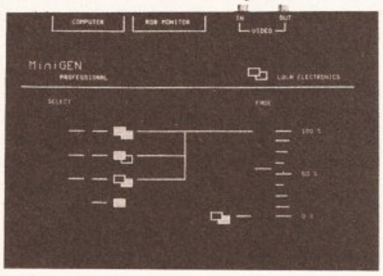
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NCommand Pro

AMOS is not simply a games programming language. There are actually a lot of programmers out there who use our favourite BASIC-variant to write serious applications and utilities.

Unfortunately, AMOS doesn't yet run under the Amiga's standard GUI (graphical user interface), Intuition, so AMOS applications haven't had a consistent user interface. Authors have been forced to write their own interface routines from scratch. AMOS does provide a few basic commands for creating pull-down menus, text windows and slider bars, but they're pretty low-level, and it still takes quite a lot of effort to design your own user interface using them.

NCommand provides a set of about 50 procedures that enable you to produce AMOS user interfaces that emulate the look and feel of Workbench 3, no matter what version of the operating system you actually have. It includes some quite powerful routines for opening screens, drawing boxes, inputting text, and for producing all those other nice "Bas-relief"-look gadgets that we're used to. There's even a fully-functional file requester that's better in some respects than AMOS's built-in one, and a text displayer.

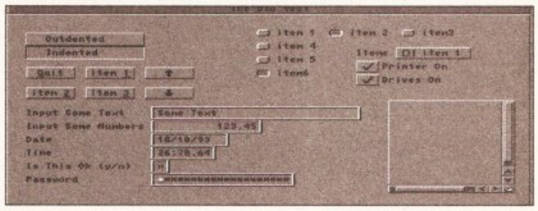
The package includes versions compatible with both original AMOS and AMOS Professional, and comes complete with a small selection of well-written demonstration programs. These include an address label printer, a disk label printer, and even a screen designer that can produce the source code to the interfaces you design. However, the fundamental problem with *NCommand* is that although it superficially makes your programs look as if they're running under Workbench, in fact they are not. Because AMOS always runs on its own hardware-level screen, *NCommand* programs don't allow proper multitasking (except by using the <Amiga>-A key combination to toggle between AMOS and Workbench), or use of the clipboard or any other advantages of a real Intuition interface.

It's worth noting that a very similar extension, called simply *Amos Interface,* was given away on the cover disk of our sister magazine, *Amiga Format,* a few months ago.

To be fair, we can't really expect the author to completely re-write Intuition from scratch in AMOS. *NCommand* is an elegant, well written and completely usable GUI in its own right, but it's no replacement for a real Intuition-based interface.

The only question that remains to be asked is – what the hell does that "N" stand for?

Simon Green



This test interface shows most of the different gadgets that are available in NCommand. Sexy, aren't they?

CHECKOUT NCOMMAND PRO

Features
●●●●●●●●○○
Provides every type of gadget you could ever need.

Documentation
●●●●●●●●○○
A professionally-produced manual, which gives full details of every procedure.

Ease of Use
●●●●●●●○○○
Fairly straightforward to use, once you have studied the example programs.

Performance
●●●●●●●○○○
NCommand programs can be a bit sluggish when interpreted, but run perfectly once compiled.

Value for Money
●●●●●●●●○○
Good value, especially considering the amount of effort that has obviously gone into making it.

Overall rating
●●●●●●●●○○
A brave attempt to try and standardise the notoriously inconsistent user interfaces used in AMOS applications.

SHOPPING LIST

AMOS NCommand Pro v3.0 ... £15
From: Oasis Software,
392 Birch Road, Wardle,
Rochdale, Lancs OL12 9LX
☎ 0706 376572 (after 6pm)

GigaMem

***GigaMem* is a virtual memory tool for the Amiga. It enables you to allocate large chunks of your hard disk as "RAM" and fool the system into thinking that it is real memory. This enables you to perform memory-hungry operations such as rendering large objects, DTP, and so forth without having to buy vast quantities of RAM. The catch is, it requires an MMU (memory management unit) to work. This means you'll need a 68020, 030 or 040 based Amiga to use this product, and you must have a working MMU also. The 68EC030 in the A4000/030, for example, is unsuitable. (Note too that previous versions of *GigaMem* won't work with 68040 chips, but v3 does.)**

GigaMem is surprisingly easy to install and get set up. I tested it on an A4000 fitted with a third-party 68030 board containing an MMU. The standard Commodore Hard Disk Installer tool is used, so it was a quick breeze through that to get it all going. One re-boot later, and I was up and running.

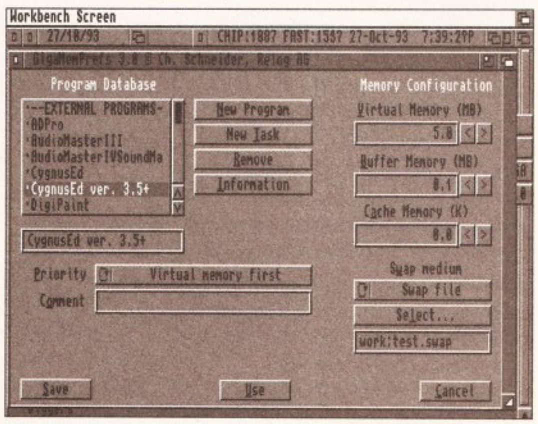
You can operate *GigaMem* in two ways. You can either allocate a whole hard disk partition to be used directly by the program as memory, or it can use a swap file instead. A swap file is a large file created by *GigaMem* that sits anywhere on your hard disk and contains the virtual memory. Swap files are far more risky, because if something goes wrong the whole partition could fail. Also, there are several restrictions on using applications that utilise *GigaMem* on the same partition as the swap file. I set it up initially with a 5Mb swap file to see if it really worked as well as rumoured.

GigaMemPrefs enables you to specify how your virtual memory is to be configured and which applications will be able to use it. It comes with a whole list of applications which are known to work with the package. It is possible to add others to this list also, but some may not work, or only function in a limited manner. I tried it out with *ADPro, Imagine* and *CygnusEd Professional* – and it really did make those vast rendering jobs feasible on an A4000 with only 4Mb of real memory.

The catch, of course, with virtual memory is that it is on disk, and hard disks are considerably slower than real memory, so any jobs which make use of virtual memory will take longer than normal. Rendering jobs, for example, can take weekends to complete rather than an evening. However, if you already have a large hard disk, and you can't afford to buy large quantities of RAM that you're only going to use on those special occasions, then *GigaMem* is the tool for you. It's the sort of thing that's so handy, it should really be built into the operating system.

I had very few problems with *GigaMem,* mostly to do with some of the debugging tools that I run. It refused to operate with the latest version of the debugging tool *Enforcer* that I have, even though the manual said it would be fine, and caused some network problems. Other than that, it worked faultlessly; the manual and supplied software are well put together and very easy to understand.

Toby Simpson



GigaMem enables you not only to set up virtual memory but also specify what programs can use it.

CHECKOUT GIGAMEM V3.0

Documentation
●●●●●●●●○○
Clear and easy to follow.

Ease of Use
●●●●●●●●●○
Use the standard Commodore Installer to set it up and then it's plain sailing.

Value for Money
●●●●●●●●○○
Cheaper than extra RAM if you have the hard disk space.

Overall rating
●●●●●●●●●○
Highly recommended, if you have the hard disk space and the MMU required to make it useful.

SHOPPING LIST

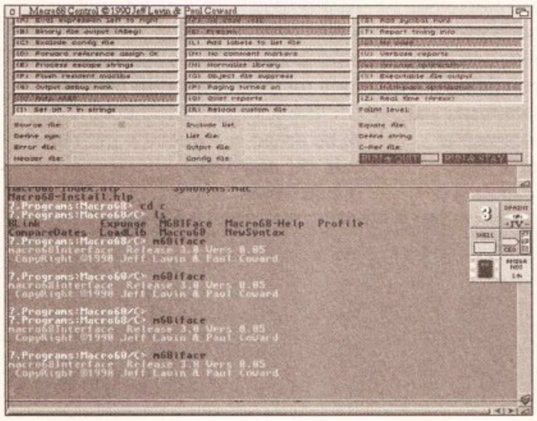
GigaMem v3.0 .... £69.95
Distributed in the UK by:
Gasteiner Technologies, Unit 2,
Millmead Business Centre,
Millmead Road, Tottenham
Hale, London N17 9QU.
☎ 081 365 1151.

Get it all together

Toby Simpson tests Macro 68K's impressive claims about being the world's greatest assembler.

The UK distributors of *Macro68* make the bold claim that this is the best Amiga assembler you will ever use. I use HiSoft's *DevPac 3* on a daily basis to program computer games, as part of my job as Lead Programmer at Millennium Interactive Ltd. I was therefore interested in this claim, to say the least. Anything that could improve my productivity would be worth its weight in gold.

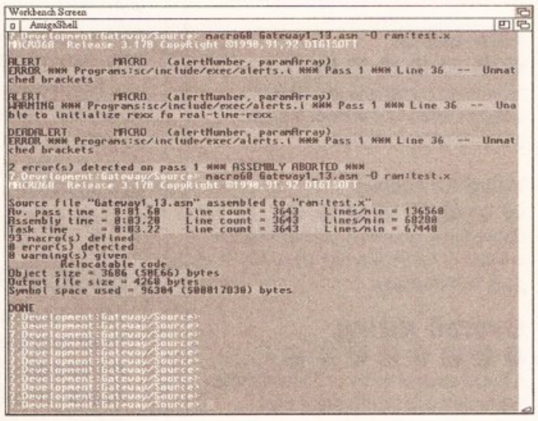
Installation, thankfully, is done using Commodore's Installer program, and it is extremely friendly and easy to use – and takes just a few minutes. Although it is possible to run this program on a floppy-based system, I doubt that it would be practical for serious development.



Macro68's almost obscenely configurable control program. Shame about the near-unreadable fonts.

Time to get started. I began with a real-life scenario and simply ran the assembler itself to see what happens. A file requester popped up, but unfortunately this failed to format itself to my screen fonts and looked less than neat. It would have been nice if the program had called the **asl** requester for users of Workbench 2.04 and above. In at the deep end, I took the Amiga CD32 version of *Diggers* and attempted to assemble it – 33,000 lines for the main module. Unfortunately, I was unable to get it to assemble with *Macro68*. It found all sorts of strange errors, and with a program that size I didn't have time to convert the source to a format that *Macro68* understood.

Time to look at the assembler in detail. *Macro68* is a command line based assembler, and not a fully integrated package. Its direct competition in this country is HiSoft's *DevPac 3,* which comes with a full screen editor and debugger. *Macro68* does not come with a debugger – you have to buy one separately. *Macro68* takes a great deal of setting up in order to get right. Its options are complex, and the option setter screen, designed to make this job a little more friendly, doesn't help by using

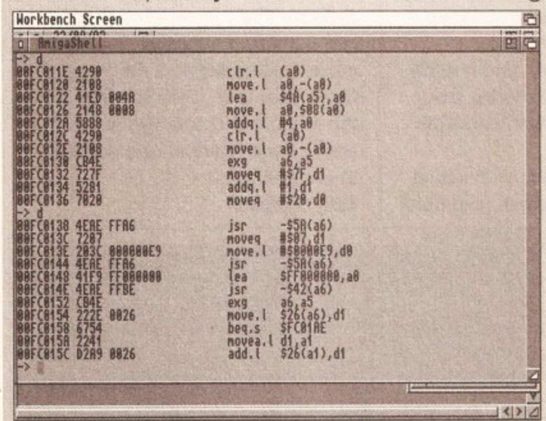


An assembly in progress, showing the sort of info that Macro68 gives, and its speed: 136,000 lines a minute.

An invaluable resource?

***Resource* is a disassembler, which means that it takes machine code instructions and converts them back into assembly language, making the program easier to understand and therefore debug. It can't create C or any high-level language from machine code, but if you have a fair understanding of assembly language, a disassembler can go a long way to help you figure out how something works (or why it doesn't).**

There are lots of disassemblers on the market, and quite a lot of very good public domain ones. Where *Resource* is unique is the degree of disassembling that it can actually do. Most disassemblers simply convert machine code to assembly language, end of story. Some, particularly those that come with debuggers (such as HiSoft's excellent *MonAm,* shipped with the *DevPac 3* assembler) will also label things if special debug information is appended to the end of the machine code program. *Resource*, however, with a little patience and a little deduction, can enable you to take a machine code program and disassemble it so far that not only can you alter and re-assemble the results, but you can come very very close indeed to the original assembly language program.

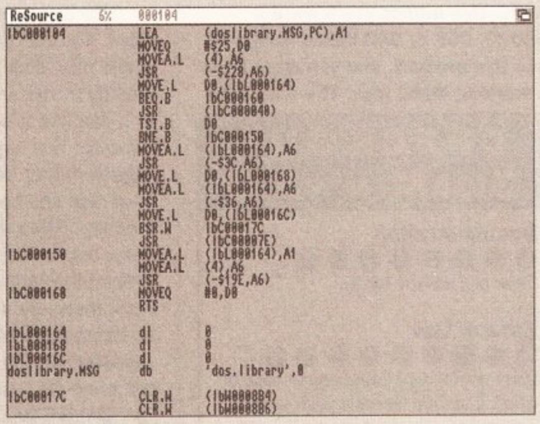


Picture 1: the results of a conventional disassembler. Fancy trying to make sense of this lot then?

Getting started is easy. Commodore's Standard Installer program is included, so if you have a hard disk, getting set up is a doddle. The documentation is excellent, with a good "Getting Started" section which takes you through an example disassembly, and you soon see just how flexible *Resource* actually is.

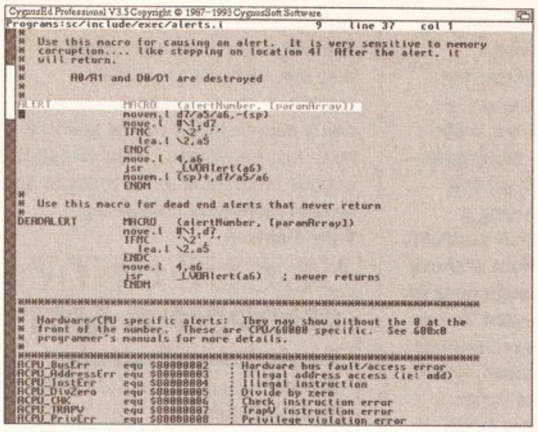
Where it differs from conventional disassemblers is that you can gradually build up a more and more readable disassembly. Exactly how does it achieve this? Well, a raw disassembly of a program without debugging information is simply a collection of numbers and values, as in Picture 1 at left. These numbers are pretty difficult to follow, even for experienced programmers, particularly if there is more than a screenful of it. Having to decode and understand a decent size program – say about 2 to 3K – would be a total nightmare. *Resource* performs its magic by enabling you to replace occurrences of numbers with meaningful names, and gradually work your way back until you have a reasonably accurate representation of the original assembly language. The result is accurate enough to be re-assembled afterwards, which is quite an impressive achievement.

To use *Resource* you just load in your file and select "Disassemble" from the menu, instructing *Resource* to scan the entire file and make its best guess as to what is data and what is code. It is impressively accurate, and the results give you your first clues to work from in order to further disassemble the file. See Picture 2 to see the results of this.



Picture 2: a disassembled program, freshly loaded into Resource and before we start work on it.

For example: *Resource* identified a reference to **dos.library** at the start of the program. A quick look at the following few instructions revealed that the **dos.library** was about to be opened, and the result stored in label reference "**lbL000164**". Our first step



```
CygnusEd Professional V3.5 Copyright © 1987-1993 CygnusSoft Software
Programs:sc/include/exec/alerts.i                 9    line 37    col 1
*
*  Use this macro for causing an alert.  It is very sensitive to memory
*  corruption.... like stepping on location 4!  After the alert, it
*  will return.
*
*       A0/A1 and D0/D1 are destroyed
*
*
ALERT           MACRO   (alertNumber, [paramArray])
                movem.l d7/a5/a6,-(sp)
                move.l  #\1,d7
                IFNC    '\2',''
                  lea.l \2,a5
                ENDC
                move.l  4,a6
                jsr     _LVOAlert(a6)
                movem.l (sp)+,d7/a5/a6
                ENDM
*
*  Use this macro for dead end alerts that never return
*
DEADALERT       MACRO   (alertNumber, [paramArray])
                move.l  #\1,d7
                IFNC    '\2',''
                  lea.l \2,a5
                ENDC
                move.l  4,a6
                jsr     _LVOAlert(a6)    ; never returns
                ENDM
**********************************************************************
*
*  Hardware/CPU specific alerts:  They may show without the 8 at the
*  front of the number.  These are CPU/68000 specific.  See 680x0
*  programmer's manuals for more details.
*
**********************************************************************
ACPU_BusErr     equ $80000002   ; Hardware bus fault/access error
ACPU_AddressErr equ $80000003   ; Illegal address access (ie: odd)
ACPU_InstErr    equ $80000004   ; Illegal instruction
ACPU_DivZero    equ $80000005   ; Divide by zero
ACPU_CHK        equ $80000006   ; Check instruction error
ACPU_TRAPV      equ $80000007   ; TrapV instruction error
ACPU_PrivErr    equ $80000008   ; Privilege violation error
```

Macro68 certainly isn't as easy to use as DevPac, or as forgiving: it found errors in perfectly runnable code.

a font so small that you need a magnifying glass to read it.

Macro68 is a full macro assembler, capable of assembling code from the 68000 to the 68030, and also the codes for the 68851 MMU and 68881/882 FPUs. It also assembles Copper instructions, has a wide and complete range of assembler directives, and is capable of putting information about errors in real time to a message port which can be read using ARexx. The manual is a bit flakey on this – it skips over it saying that it is "beyond the scope of the manual to provide detailed instructions for its use", and instead points you to the examples. For a beginner, this would be nigh-on impossible to grasp. Examples are provided for the *CygnusEd* text editor [reviewed on page 36 of this very issue, coincidentally] and allow the assembler to jump to the lines that contain faults as they happen.

Unlike *DevPac 3, Macro68* is able to assemble the new syntax of 68000 assembly language, as defined by Motorola. Its customisability is amazing. If you spend enough time on it, you can virtually construct your own assembler in the way you want it to look. You can even define the final output strings that appear when assembly is complete. I'm not too sure how useful this would be in real terms, but it's there.

The manual is a bit hard to follow. There's no index, and finding a particular point can be very hard indeed. This is what made it hardest to convert assembly language that worked fine on *DevPac 3* across to this assembler. A blessing is that the documentation is supplied also on disk, in a sort of Hypertext format. The Hypertext driver does not like it if you don't use Topaz 8 point as your main font, but nevertheless it's a valuable addition to the package.

THE BOTTOM LINE

If you're a beginner, check out HiSoft's *DevPac 3*. It is a fully integrated package, complete with an advanced editor, a powerful debugger and disassembler, and it's a whole bundle easier to use. The manual for it is very well laid out with a comprehensive index and table of contents. After spending a couple of weeks playing with *Macro68*, I can honestly say that I would not leave *DevPac* for it. HiSoft is much more friendly and easy to use, and a lot less complex to set up. I also enjoy the editor, and the debugger, and the ease of looking anything up in the manual. In addition to this lot, *DevPac* is cheaper.

If you're a professional who needs the configurability and access to the Motorola new syntax, then maybe *Macro68* could be the assembler for you. But if you do buy it, be warned: you'll need to buy a separate debugger and editor if you don't already have them. And again, if you're a beginner you will have a really hard time with this. AS

SHOPPING LIST

Macro 68 assembler £130
Distributed in the UK by
Helios Software, Notts.
☎ 0623 554828

CHECKOUT MACRO68

Features
●●●●●●●●●○
A flexible and very powerful assembler.

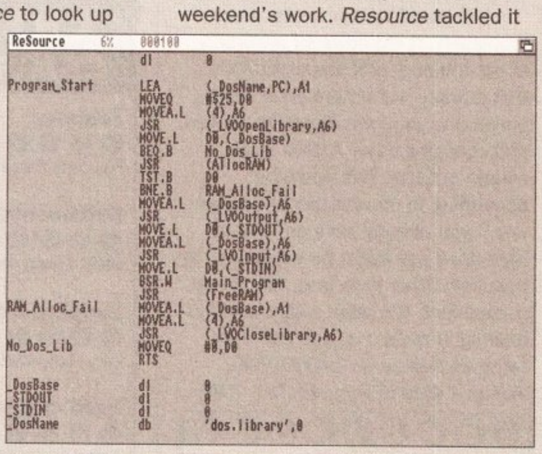
Documentation
●●●●●●○○○○
The lack of an index makes it hard to find your way around, and some topics are not covered at all adequately.

Ease of Use
●●●●●○○○○○
Very complex and unforgiving, and daunting for the beginner.

Overall rating
●●●●●●●○○○
A powerful advanced 68000 assembler with a great deal of configurability.

was to tell *Resource* that in future any references to **lbl000164** should be called "**_DosBase**". Things are looking better already. You can now see which of the calls to the operating system use **dos.library**. Time to make those OS calls a little friendlier. I knew that the first one was a call to **OpenLibrary**, and *Resource* spotted this. I saw two calls to **dos.library** functions – they were easy to identify. I moved to the line in question, told *Resource* to look up the function name, and bingo – a call to **dos.library Output**, and **dos.library Input**. My conclusion from this is that the program was fetching the default input and output channels, **STDIN** and **STDOUT**. So I was then able to correctly name those two labels too. By then following each of the subroutine calls to its destination and finding its use by getting back all the names to calls of OS routines (and things were easier now because of references to **STDIN**, **STDOUT** and **_DosBase**), I was quickly able to identify what each of the routines did and name them. In a matter of ten minutes from start to finish I was able to make sense of several K of program. Picture 3 shows what I was able to do.

I started with quite a complex program, which I had no remaining documentation for, and I knew that it did not have debug information. I did this on purpose, because I knew that with a conventional disassembler I would be unable to understand what was going on, probably even after a weekend's work. *Resource* tackled it



```
ReSource      6%     000100
                dl        0
Program_Start   LEA       (_DosName,PC),A1
                MOVEQ     #$25,D0
                MOVEA.L   (4),A6
                JSR       (_LVOOpenLibrary,A6)
                MOVE.L    D0,(_DosBase)
                BEQ.B     No_Dos_Lib
                JSR       (AllocRAM)
                TST.B     D0
                BNE.B     RAM_Alloc_Fail
                MOVEA.L   (_DosBase),A6
                JSR       (_LVOOutput,A6)
                MOVE.L    D0,(_STDOUT)
                MOVEA.L   (_DosBase),A6
                JSR       (_LVOInput,A6)
                MOVE.L    D0,(_STDIN)
                BSR.W     Main_Program
                JSR       (FreeRAM)
RAM_Alloc_Fail  MOVEA.L   (_DosBase),A1
                MOVEA.L   (4),A6
                JSR       (_LVOCloseLibrary,A6)
No_Dos_Lib      MOVEQ     #0,D0
                RTS

_DosBase        dl        0
_STDOUT         dl        0
_STDIN          dl        0
_DosName        db        'dos.library',0
```

Picture 3: the same program, about 15 minutes later. This is starting to make a lot more sense as code.

effortlessly, and I hardly had to touch some of its more advanced features.

Resource comes with a good few useful utilities, and a configuration program which enables you to change pretty much everything. I was a little alarmed though that the Configuration program gave an *Enforcer* hit: an illegal byte write to location FFFFFFFF. No commercial program should have *Enforcer* hits in it.

One thing to watch for: *Resource* can be more than a little greedy with memory, though this is to be expected, given what it can do. A 10K object file that you are going to run through *Resource* will take up about 100K. The documentation suggests that you will need at least ten times as much memory as the size of the program in order to work on it. For example, if you have a 20K file, by the time you have finished creating labels and working on it you are likely to have used about 200K of memory.

THE BOTTOM LINE?

Quibbles. I had to think long and hard about this one. The Puzzle Factory have really come up with a powerful tool here. And anyone who is thinking of buying a disassembler really should look no further. The only thing is that for most people, something this extensive might not really be necessary – it is an extremely specialised product. It's certainly not a debugger, by any stretch of the imagination; it is simply an exceptionally advanced disassembler. If you already own a reasonably good one, say *MonAm 3*, which comes with HiSoft's *DevPac*, then to be perfectly honest it's unlikely that you would get your money's worth out of *Resource*. And of course *Resource* is not a miracle worker. If you don't know what you're doing, you are unlikely to get much joy out of it. If you have the patience, though, you can achieve astonishing results. AS

SHOPPING LIST

Resource £130
By: The Puzzle Factory.
Distributed in the UK by
Helios Software, Notts.
☎ 0623 554828

CHECKOUT RESOURCE

Features
●●●●●●●●●○
Brilliantly flexible and powerful.

Documentation
●●●●●●●●●○
Excellent, with a very helpful "Getting Started" section.

Ease of Use
●●●●●●●●○○
If you know what you're doing, *Resource* makes the job pretty effortless for you.

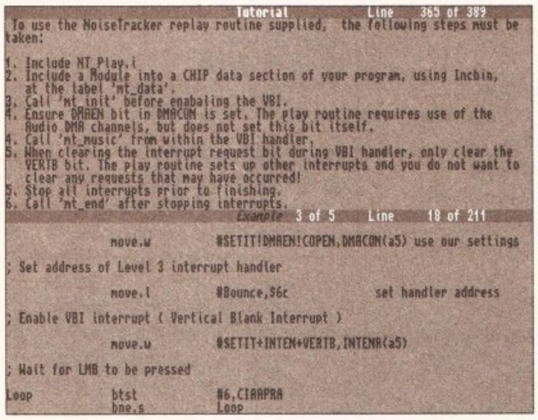
Overall rating
●●●●●●●●●○
The best disassembler I have ever seen, but definitely a highly specialised product – make sure you really need it before purchase.

The ACC Hardware Programming Manual

This is a four-disk guide to programming the Amiga using the hardware directly, using 68000 assembly language. It comes complete with a linker and assembler (a particularly good PD assembler called *A68K*) – in fact, all you need to get started learning assembly language on the Amiga.

There's plenty of documentation and installation is easy, though there is no hard disk installation facility, so you'd have to do that yourself. The tutorial is divided into modules, each containing text explaining what's going on, some examples and various exercises to try.

The first part introduces the basics, how to use the supplied startup code, and then the Amiga hardware in general, discussing Interrupts, DMA and the hardware registers themselves. You then go on to learn about programming the Copper co-processor, dealing with the mouse and keyboard, and information on interrupts and audio. I had difficulty getting a lot of the examples to work on an A4000/030, with some of them crashing the computer, and in one unfortunate case forcing a re-validation of one of my drives. Further investigation into the examples revealed some rather unfortunate programming techniques, which were causing some problems.



The ACC Hardware Programming Guide: examples with easy-to-follow explanations. Shame they're a bit iffy...

Disk 2 is dedicated to display, bitplanes and screen organisation. Again, I had serious difficulty getting the examples to work, mostly because of the interrupt allocation technique used (take without asking). There are certainly some excellent general techniques explained though, for special effects such as flipping and melting the screen. Dual playfields are also explained, but HAM, Interlacing and Extra Halfbright are not.

Disk 3 deals with sprites, the blitter, showing text on the screen, and scroll texts. The sprites section covers some very clever techniques – joining sprites, 16-colour sprites, collision detection, and using a whole load of them to show starfields and other neat things. Most of these examples ran okay, although none of the scroll text demos worked for me. I had corrupted graphics on them all (most appeared to be screen modulo related). The AGA chipset is not detailed, which makes this guide effectively outdated, nor are some more advanced display techniques – which is a good thing: with some ECS screen registers, it's now possible to actually damage your monitor by setting up impossible displays.

The guide is certainly clearly written and well organised. As for the content... well, if you're serious about learning to program the Amiga, this really isn't the way to do it. Many of the programming techniques are very risky, and a considerable proportion of them are totally illegal. Accessing the hardware directly is widely used in writing games or demos, but, if you are going to do it, do it properly. Guidelines are in the Commodore Rom Kernel Guides. There are certain things you simply *don't have to break the rules to do,* such as working with Interrupts, memory access, and the blitter. You don't actually have to disable the operating system to prevent it taking precious processing time. However, if your heart is set on writing whizzy demos (despite the saturated demo market), and you're not fussed if they only work on a handful of machines, then I guess this is a pretty easy-to-follow way of learning how. Just be warned: when you start serious programming, be ready to do several months of un-learning.

Toby Simpson

SHOPPING LIST

The ACC Hardware Programming Manual £15.60
From: Amiganuts, 1 Daffern Avenue, New Arley, Coventry CV7 8GR.
☎ 0676 41257.

CHECKOUT ACC HARDWARE PROGRAMMING MANUAL

Ease of Use
●●●●●●●●○○
Well-written and easy to follow.

Legality
○○○○○○○○○○
Accessing hardware has to be done properly, and this is not properly.

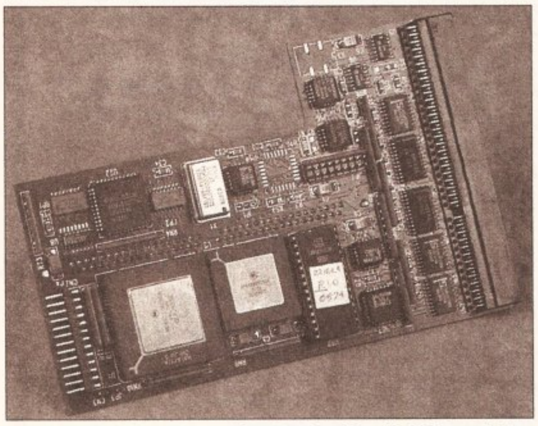
Value for Money
●●●●●●○○○○
Not expensive, but not that valuable.

Overall rating
●●●○○○○○○○
Even most demo-coders don't use most of these programming practices any longer, and many of the examples themselves don't work.

CSA 12-Gauge

The CSA 12-Gauge is a blindingly-fast 68030-based accelerator for the A1200. The version reviewed came complete with a 50MHz 68030 chip, 50MHz 68882 floating point unit, 4Mb of Fast RAM, and a SCSI interface. Installation is easy: just insert it into the trap-door in the base of the A1200. To use the SCSI option, you have to do some fiddling to get the connector installed, but you don't have to open the case and invalidate your warranty.

The MMU (Memory Management Unit) enables you to run such tools as *GigaMem* virtual memory (see the review on page 61) and lots of debugging tools for programming. The FPU chip makes rendering applications, such as *Imagine*, whizz along almost as fast as an A4000/040.



The CSA 12-Gauge accelerator for the A1200 – a full '030 chip, MMU, FPU, SCSI, and lots of other letters...

The SCSI option enables you to plug in any SCSI device, including tape drives for back-ups, hard drives and CD-ROM units. Software is supplied for setting up and partitioning a hard disk, or if you have Commodore's **HDToolBox** you can use that instead. CSA also supply a utility called *DROM* which maps your Kickstart ROM into the new Fast memory, using your MMU. This makes your machine even faster.

The board worked pretty much faultlessly. It did however adversely affect the boot-process of A1200s that already had a hard drive inside, preventing you from disabling caches and changing other A1200 boot-screen options. This could be something to do with the power load, and if you already have an internal hard drive you might be advised to try this first. Other than that, this board is excellent. It's quite expensive, but bearing in mind that it is well over twice as fast as an A4000/030, includes 4Mb of very very fast RAM (expandable to 32Mb) and a SCSI interface too, it really is impressive.

Toby Simpson

SHOPPING LIST

CSA 12-Gauge accelerator for the A1200 .... £799
Without 68882 floating point unit: £699
Distributed in the UK by: Omega Projects Ltd.
☎ 0942 682203.

CHECKOUT CSA 12-GAUGE

Features
●●●●●●●●●○
Full 030 chip, MMU, plus SCSI.

Documentation
●●●●●●●●○○
Okay – even covers inserting SIMMs.

Supplied Software
●●●●●●●●○○
Very comprehensive.

Ease of Installation
●●●●●●●●○○
A doddle except for the SCSI option.

Value for Money
●●●●●●○○○○
No doubting its speed, but expensive.

Overall rating
●●●●●●●●○○
An excellent upgrade for the power user requiring the performance and expandability offered by SCSI.

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- Ultra Quiet Mode - 43dB(A)
- Colour Printing Standard - Swift 200C
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- Parallel Interface
- Graphics Resolution: 240 x 216dpi
- Epson and IBM Emulation
- Auto Set Facility
- Ultra Quiet Mode - 45dB(A)
- Advanced Paper Handling
- Colour Printing Standard - Swift 90c
  Colour Printing Optional - Swift 90
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SWIFT 90 MONO

RRP	£199
STARTER KIT	£49
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SAVING:	£109
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SAVING:	£97
SILICA PRICE:	£219

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24 PIN 192 CPS 136 COLUMN

- Citizen Swift 24x - 24 pin - 136 col
- 192cps Draft, 64cps NLQ
- 8K Printer Buffer + 4 Fonts
- Parallel Interface
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- Epson, IBM and NEC P6 Emulation
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You bet it can!

Andy Nuttall tests the new AGA version of CanDo, the "authoring package" that makes it easy to create multimedia presentations.

Multimedia is the future – graphic images, animation, film, sound effects, music, all rolled into one. *CanDo* is here now, and it's an "authoring package" which enables you to create multimedia presentations on your A1200 or A4000.

CanDo presentations are called Decks, because they are made up from a number of Cards – single windows you can set up in different ways: you can use them to display information, either graphics or text; or you can include buttons which offer the user a number of choices. The contents page of a *CanDo* encyclopaedia would list the subjects and page numbers, with a separate button for each which the reader could press to access the page. Other buttons could offer options to expand on specific parts of the subject.

You could also create an adventure game, where the player presses different buttons to move around the game or interact with characters. The *CanDo* Cards could be set up to display pictures of the game area, to run an animation, or to play sound effects. If you have access to a video digitiser, you could even give people a guided tour of your house.

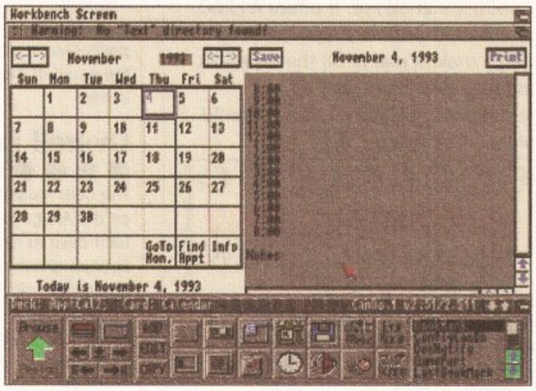
You even have the capability to create arcade-style games. A version of *Tetris* wouldn't be too difficult to knock up in a couple of days, while the odd puzzle game is supplied to give you an idea of what you can do.

CARD SHARP

A *CanDo* Card starts out as a background, and you can either design this yourself or use one of the many backgrounds supplied with the package. Images created by external packages can be imported into the backgrounds, so you can even use digitised pictures. The colours used throughout the design stage depend on the particular mode you're using – *CanDo AGA* makes use of all full-colour AGA modes.

You can place on the background a number of Objects, which can either be used to receive data or to display information – buttons and menus enable the end user to do something with your project, while a simple text box is a good way of telling the user what to do. The Card is simply a container for Objects – you put in as many as you like.

Creating a button is easy. Simply open a background window, click on **Button**, move a set of crosshairs over the background and click your mouse where you want the button to go. Determine its size and colour, then check which type of border you require (sunken, raised, embossed – you're given a number of choices). You can then test it out using the **Browse** option, and make sure it registers when you click on it with your mouse. Going back into edit mode, you can attach a label to it in any font, and tell *CanDo* which card to jump to, or which program to launch, when the button is pushed.



CanDo comes with examples which we call functional, rather than graphical, such as this calendar.

As well as buttons, *CanDo* enables you to create Workbench-like pull-down menus, along with smaller sub-menus if your application needs them. When you begin to create menus, things begin to look a little complicated – because you have a menu bar at the top of the screen which you've created, and one at the bottom of the screen which belongs to *CanDo* and is used as part of the editor. But *CanDo* is laid out very well, with a clear use of colour.

Other Objects can be set up to play sounds, display error messages, launch an ARexx script, run an animation – even to read the input of a joystick or mouse. You can create windows, fields, memos – even a timer to launch a script at a particular time of day.

Using the main editing screen in this way is the most obvious, and certainly the easiest, method of creating presentations in *CanDo*. As in most programming construction kits, creating projects using the graphical editor produces a separate script file, which *CanDo* then uses to run your project.

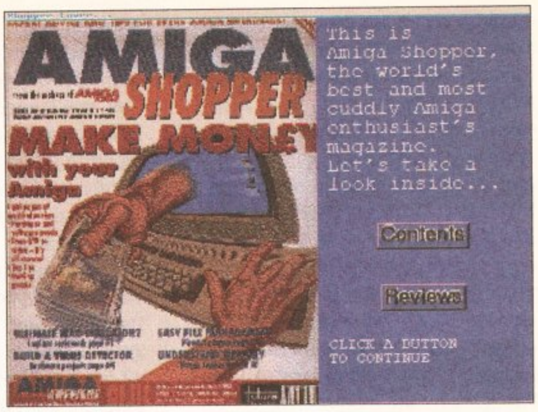
The script file is structured in a very similar way to a high-level programming language such as C, Pascal or ARexx. As you add in buttons, menus and other objects, *CanDo* modifies the script file accordingly. If you happen to be conversant with high-level languages, *CanDo* enables you to get in and write your own script files from scratch, bypassing the graphical editor altogether.

While hardened programmers will relish this prospect, it's a good idea for novices to stick to the main editor only – it's a damn sight easier, it's difficult to make mistakes, and debugging a *CanDo* script file is not easy. If you do want to get your fingers dirty, *CanDo* has the tools to help (see page 68 for details).

USEFUL UTILITIES

When you've created your project, you can run it directly from the *CanDo* editing screen. Clicking on the **Browse** button takes control from the editor and into your application to check that it's running correctly. This is necessary for debugging, because no matter how careful you've been, you'll always get at least one gremlin in your system. When you're satisfied it's bug-free, you can use one of the several utilities supplied to make your application stand-alone (that is, to enable it to run without the main *CanDo* program).

TheBinder takes your project and integrates (binds) it with an executable file called *DeckRunner*. The result is a tool which, when executed, will locate all the graphics and sound files you included, and load them into memory. Another program called *MultiBinder* integrates your project, *DeckRunner* and all the associated files into one tool – which saves the hassle of a large number of files in your final application. You can then put your project on a disk and distribute it to your friends!



Okay, so it's a little on the nepotistic side; but you get a basic idea of what can be done with CanDo.

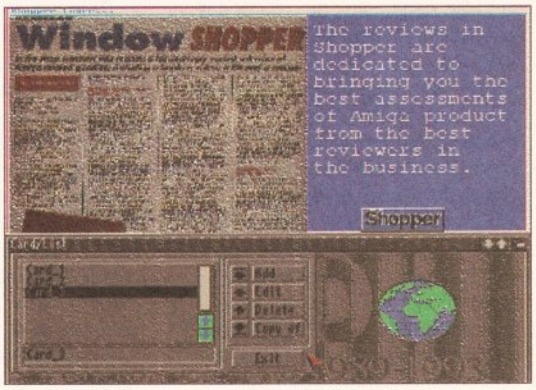
Other useful utilities are: *ThePrinter*, which prints out the contents of a deck, along with information about objects and scripts; *AnimManager*, which runs via ARexx to control and play full-screen animations; and *TheRelocator*, which automatically changes scripts when you move associated graphics and sound files to a different path. This saves you having to go through scripts step-by-step changing path names whenever you move a file.

DOES IT DO?

Both the *CanDo* program and the manual are obviously geared towards the complete beginner. This is just as well, really, because the projects that most people will create with *CanDo* will be used by beginners.

It's a cliché, but *CanDo* will grow with you – it can be as complicated or as simple as you need it to be. If you want to create a simple noticeboard to display text, that's easy; if you want to add in graphics, sounds and so on, that's easy too. If you want to create a thousand-page encyclopedia, with colourful pictures and reams of informative text – well, it might not be easy to produce, but *CanDo* will help you all the way.

As you would expect, *CanDo* runs



CanDo applications are called Decks, which are made up of Cards. Our Shopper Guide has three Cards.

superbly on an A4000 – menus and functions are lightning quick. It also runs happily on an unexpanded A1200, although you do need a hard drive to run it. One bizarre point regards an apparent bug in the Amiga operating system. When you first install *CanDo* to your hard drive and launch it, an Out Of Memory error occurs. With 6Mb of RAM free, this not an easy one to explain! However, it can be corrected by simply loading up the **ScreenMode** function in the **Prefs** drawer of Workbench, and then clicking on **Save**. Strange, but this corrects the fault – and then you won't need to do it again unless you need to re-install the software.

It's worth noting that although *CanDo* v2.51 is AGA-orientated, it does work on Workbench 2 machines but without the benefits of AGA modes. It does not work with Workbench 1.3 or earlier.

CanDo really is incredibly simple to use. The example files and manual tutorials go through the Deck creation process step-by-step, covering all aspects of objects and cards, so you'll need to spend a good few hours following certain portions of the manual before you start. Shock! Horror! Yes, you'll need to refer to the manual a lot while you're using *CanDo*, and it's a big tome, too. Trouble is, it's geared towards version 2 of *CanDo*, and because the layout and general look of v2.51 is markedly different from the earlier version there might be some problems matching the manual to the screen.



The main screen uses clear icons to create an intuitive interface that even an idiot could understand.

Any other niggles? Only a couple. With *CanDo* 1.5 you could play sound samples, and sequence them together using a script file. This version of *CanDo* enables you to load and play *MED* tracker files, with which you can create four-channel music using samples and link them with your *CanDo* project. *MED* also enables you to link *CanDo* up to external MIDI instruments – but what about a link to MIDI sequences from, say, *Bars and Pipes Professional?* Given that *CanDo* is capable of producing some stunning graphical presentations, is this not a glaring omission?

Also, the package now supports Compugraphic and colour proportional fonts, but it doesn't support them in every function. For example, a Memo box will only accept standard Amiga bitmap fonts, whereas a button will quite happily load in any type. This inconsistency is very irritating, and forces you on more than one occasion to display messages in the form of a button.



The Memo Editor is used to display text in any colour or form, but doesn't support proportional fonts. Why?

For the Amiga user wanting to create presentations, applications or educational tools, *CanDo* takes away all the programming headaches, leaving you to get your creative juices flowing and actually make something quickly and easily. *CanDo AGA* joins a long list of multimedia creation programs, including *Hyperbook, Picture Book,* and the previous *CanDo* incarnations. It offers A1200 and A4000 owners a creative tool which makes use of all the new AGA modes, all colours with all resolutions, adding up to a powerful piece of software. **AS**

SHOPPING LIST

CanDo v2.51 AGA £149.95
From: INOVAtronics UK Ltd, Unit 11, Enterprise Centre, Cranborne Road, Potters Bar, Herts. EN6 3DQ.
☎ 0707 662861

CHECKOUT CanDo v2.51 AGA

Features
●●●●●●●●○○
CanDo can do just about anything you need for the perfect presentation in any AGA mode. The *MED* player addition is good, but it could do with a sequencer file player as well to enable you to make more complex presentations using MIDI instruments.

Documentation
●●●●●●●○○○
An excellent manual, well laid out, great as a teaching aid and as a complete reference guide. Problem is, it's geared towards an earlier version of *CanDo*, and things have changed – especially in the tutorials.

Ease of Use
●●●●●●●●○○
This one's got "intuitive" written all over it. In large, friendly letters.

Performance
●●●●●●●●●○
A little slow occasionally on an unexpanded A1200. Got an A4000? You'll be laughing.

Value for Money
●●●●●●●●○○
150 quid's a lot of money, but compared to multimedia authoring packages on other machines *CanDo's* the equal of most, and better than some.

Overall rating
●●●●●●●●○○
The best multimedia authoring package on the Amiga just got better. It needs a hard drive to run, but then if you're serious about your Amiga you'll need one sooner or later anyway. As the AGA machines grow in popularity, it's great to see packages like *CanDo* extended to encompass the new machines' features.

TOOLS

CanDo's script editor gives you the chance to get right into the code of multimedia authoring, bypassing the graphical front-end. If you want to get your hands dirty but you're not technically-minded, INOVAtronics have included a number of tools which take some of the slog out of that heavy programming...

- **ARexx** Enables *CanDo* to communicate with other ARexx-compatible programs via the Amiga's ARexx ports. This can be used to launch other programs from within *CanDo*, and transfer data between the two.
- **BrushAnim** *Deluxe Paint III* and *IV* BrushAnims can be played, moved and controlled from within *CanDo*. The animation is loaded into a buffer, then the velocity, acceleration and position of the animation are entered – then just press the **ShowBrushAnim** tool.
- **Bugbasher** Click on this to perform a thorough syntax check of your *CanDo* script – it even checks for inappropriate keywords and missing quotes. There is also a simpler **VerifyScript** command which just checks for typing mistakes.
- **DOS** The **DOS Editor** tool enables you to run another program from within *CanDo* by providing you with a file requester. You then choose the program to be run, and the tool creates a DOS command which executes the file directly from the script.
- **Field** A field can be used to obtain information from the user of your finished project. With the **Field Editor** tool you can easily edit the position, size and look of the fields.
- **Paint** The **Paint Editor** tool acts like a basic paint program. Using the paint functions, you can draw in the selected window, and *CanDo* will create the appropriate script commands. Beware though – if you draw a complex picture, the script can become pretty large...
- **Picture** If you need to locate and load an image file from a script, the **Picture** tool is the easy way to do it. *CanDo's* file requester opens to enable you to find a picture, and the tool does the rest.
- **Sound** This is multimedia, after all. Of course you can play sounds, which must be in the form of IFF samples – the 8VSX type which most Amiga samplers save out.
- **SoundSequence** A SoundSequence can be created in the form of a Document, a text file which contains a list of the sounds to be played in sequence. You can create more than one Document and launch them at different times during your presentation.
- **Text** When you have your *CanDo* window set up, the **Text** icon enables you to position text in it quickly and easily. Type the text into the Text Requester, then use the mouse to position it in your window, and – yes, you guessed it – *CanDo* creates the necessary script.

The Music Librarian

CHECKOUT
THE MUSIC LIBRARIAN

Documentation
●●●●○○○○○○
Truly dreadful manual, which takes a number of reads before you can get it straight in your head. Presenting information in alphabetical order is not a sure way to be understood.

Ease of Use
●●●●●●●○○○
However, despite the manual's faults, it's not difficult to get up and running straight away.

Value for Money
●●●●●●○○○○
Not bad for the amount of flexibility this program offers.

Overall rating
●●●●●●●○○○
A very useful program, although it must be said that it has somewhat limited appeal. You could feasibly turn it to other tasks, but there are better dedicated database programs if you want to create your own type of database. The integration of other types of file, and cross-referencing abilities, save it from being a rather limited and pointless release.

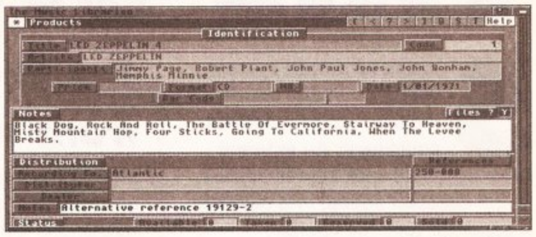
T*he Music Librarian* is a database program specially for handling a large music collection. It offers a way of managing information on collections of music, be they CDs, LPs, tapes or video cassettes. Each file, known as a record, contains information about a particular musical medium, and gives you instant information on the recording artist, tracks on the album or CD, release date, catalogue number and other related information.

What makes it even more useful is the way you can link records of one type to another. Using External and Internal Pointers, records can be linked to other user databases within the program – so you might attach the record of a musical instrument to the record of a track it's used on, as well as a biography of the composer.

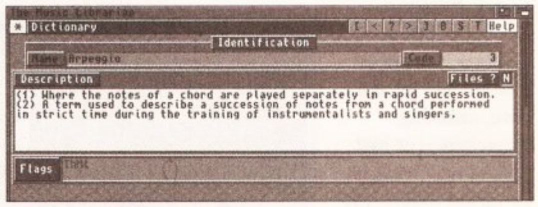
Even more powerful is the integration of other file types. For example, you can present IFF pictures, ASCII text files, and even 8SVX samples from within the database. The possibilities here are very exciting – imagine being able to bring up a CD's file, see the album cover and hear the first few bars of music, all from the one program.

The program is not difficult to use, although if you have a floppy-based system I'd seriously advise against it. I didn't once manage to get the program working properly running from floppy, and I tried on three different Amigas. On hard drive it's fine. My only reservations about the software is its overall usefulness. How many people are going to want such specific facilities from a database? Still, there is a lot of flexibility built in to the program, and if you are looking for some way of cataloguing a vast collection, you need look no further than *The Music Librarian*.

Tim Tucker



Cross referencing your music library is a doddle with The Music Librarian.



You can include definitions or explanatory notes, perhaps to go with a feature on a favourite composer.

SHOPPING LIST
The Music Librarian £39.95
(plus £2.35 p & p if you order direct)
From: Applied Research Kernel, Corve Farmhouse, Corve Lane, Chale Green, Nr. Ventnor, Isle of Wight PO38 2LA
☎ 0983 551 496

The Magic of Music and MIDI video

Books and magazines can help when you're learning the ins and outs of computer-generated music, especially since so many of the manuals are so badly written. However, given the best way to explain almost any subject is visually, video clearly holds the key. Razza's latest, *The Magic of Music and MIDI*, not only covers the hard facts about computers and music, it also does it entirely from the perspective of the Amiga.

CHECKOUT
THE MAGIC OF MUSIC AND MIDI VIDEO

Presentation
●●●●○○○○○○
The diagrams are awful, and some important concepts are described but not actually shown. Even reading text out loud doesn't make it any clearer.

Information content
●●●●●○○○○○
A lot of ground is covered, and a good deal of Amiga software demonstrated, but too often the explanations are unclear and confusing.

Value for Money
●●●○○○○○○○
Really only watchable once, after which you'll be using it to tape *East Enders*.

Overall rating
●●●●○○○○○○
The lack of depth, gaping omissions, and some vague explanations ensure that you won't find all the answers to your music-related questions here. In fact, it's more likely to throw up some new ones you hadn't even considered. Best thought of as a way of seeing what's possible, but you're unlikely to watch it more than once.

The video covers all three areas in which your Amiga can be used to produce music – using the Amiga's own internal sound chip as a synthesizer, using the Amiga to digitally sample sounds, and using the Amiga at the heart of a MIDI sequencing system. During the one-hour presentation a variety of the most popular music programs on the Amiga are used to give examples, including Dr T's *Tiger Cub*, Blue Ribbon Soundworks' *Bars and Pipes Professional* and *SuperJam*, the *Audio Master IV* sampling package, *Deluxe Music Construction Set* and *Sonix*. By seeing what each of these can do and how they do it, you can see what might suit your own needs.

An hour isn't long enough to go into much detail on all the subjects covered, and all credit to Razza for giving a broad range of information. However, although those involved and interviewed clearly know their subjects, their explanations are very badly communicated. The subject of MIDI suffers the most, with particularly atrocious diagrams. Someone's got *Deluxe Paint* and thought it would be useful, but a mouse user's handwriting is not the easiest to read. The chance to use practical examples is criminally neglected in favour of shots of someone aimlessly pushing a mouse around a sequencer's main screen, and the coverage of MIDI inputs and outputs is baffling. It's nice to see the famed American enthusiasm shining through, but the claim that MIDI offers "complete satisfaction instantaneously" is a little far fetched.

Too often the video lingers on the obvious, rather than explaining the intricacies. Three times we are treated to the secret of plugging a microphone into the socket marked Microphone on a sampling cartridge, but never do we see where a MIDI interface plugs in to the back of an Amiga and how it should be attached to external equipment. In the section on the printing of musical scores, we see the incredible advancements of printer technology, but not what printed *music* actually looks like.

The best this video offers is an introduction and a guide to what's possible. But if you want useful, usable information you'll have to go back to old-fashioned books — and a subscription to *Amiga Shopper*.

Tim Tucker



The Magic of Music is a useful introduction, but rather than answering questions it might throw up new ones.

SHOPPING LIST
The Magic of Music and MIDI Video £12.99
From: Burgess Video Group, Unit 6, The Industrial Estate, Brecon, Powys LD3 8LA.
☎ 0874 611633

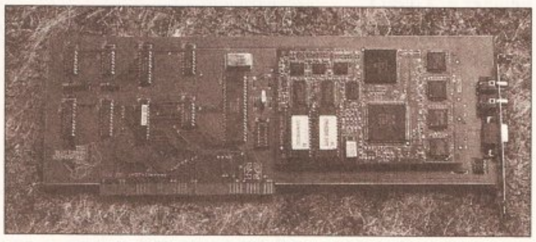
This stop for music

The One-Stop Music Shop offers quality synth sounds from within your Amiga. Tim Tucker checks it out.

Setting up a MIDI system with your Amiga usually requires some peripheral equipment. An external MIDI keyboard with built-in sounds is the simplest set-up, and possibly a separate tone module for accessing more sounds. You'll also need a MIDI interface to attach to your computer so that all your bits of kit can communicate with each other, and a mixer to enable you to hear the separate sound sources playing together. Before long, your bedroom or work area starts to get a little cluttered. In recent times, the concept of desk top music has crept into the home computer music scene. Desktop versions of tone modules are being brought out all the time, enabling musicians – or just people who wish to integrate music into a multi-media environment on the Amiga – to work with equipment with great flexibility but which doesn't take up too much work space.

The idea of having a totally integrated multi-media workstation is highly appealing, and nobody has done more to further the cause on the Amiga than Blue Ribbon Soundworks. Highly powerful music programs, such as *SuperJam* and *Bars and Pipes Professional*, have been carefully designed to enable the integration of almost any facet of the Amiga's many capabilities, including graphic art, animation, desktop video and of course sound effects and music. The same company has just gone one step further and introduced the ultimate in musical hardware integration – *The One-Stop Music Shop*.

The One-Stop Music Shop is a card containing the Proteus SoundEngine synthesizer module from E-mu Systems Inc, so in essence it contains many of the same sound capabilities as the family of synths based on the highly popular Proteus range, widely used in professional circles all round the world. The card sits inside the Amiga 1500, 2000, 3000 and 4000, and thus enables you to have an entire synthesizer available to you without using up any valuable desk space.



The One-Stop Music Shop is like having an entire synthesizer sitting inside your Amiga ready to play.

Installing the card is not difficult, just requiring you to take off the outer casing and push the card into one of the available card slots. If you've never done this before, it's much easier than it sounds, and once it's done the card can be just treated as part of the Amiga. The only evidence of its existence are three new ports on the back of the Amiga – two RCA jacks, exactly like the ones which already sit on the back panel of your Amiga and which take the audio out of the sound card; and a new MIDI port which directly accesses the *One-Stop Music Shop* synthesizer. The great thing about the extra MIDI port is that it enables the use of 32 channels of MIDI, if you're using the card in conjunction with *Bars and Pipes Professional*, because you can still attach a normal MIDI interface to the Amiga's serial port as well. More on this later.

SOFTWARE

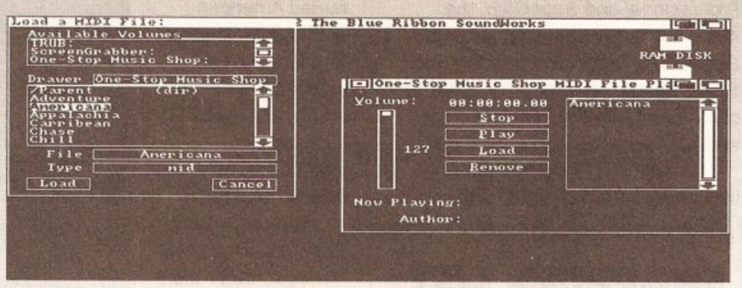
Accompanying the hardware is a program disk containing *The One-Stop Music Shop's* software tools, essential for making the card accessible to the user. The simplest way to use the system is to load up the *LoopBack* program and connect a MIDI lead from the MIDI Out of a keyboard to the MIDI In of *The One-Stop Music Shop*. This effectively turns the Amiga into a synthesizer tone module, enabling you to play music on your keyboard and trigger the internal sounds on the card. The individual sounds are organised into two banks of pre-sets containing 192 sounds, which conform to the General MIDI specification (see box for information). All the sounds you need are available, from piano, strings, brass and guitar to drums and percussion.

Most of the sounds are handled very well by the card. There's a good variety of pianos, from the full-bodied concert model to the tinny honky tonk, as well as other excellent keyboard instruments, including a superb funky-sounding clavinet, rich and full-bodied organs (oooer), and a delightfully baroque harpsichord pre-set. The guitars are noteworthy for actually sounding reminiscent of the real thing, rare on synthesizers, and the strings are truly wonderful, highly usable washes of sound. The brass instruments are slightly weedy, but can be layered on top of each other in a sequencer to great effect, and there are some useful choir and pad sounds to add the required ambience to your music. Unfortunately, there are no built-in effects in the synth, which is a shame – it's something which every synth worth its salt features these days. The extra cost of including them may not have been justified, and there are a lot of very good value reverb units available these days, but it does rather defeat the object of an integrated system to have to resort to outboard effects.

Perhaps the weakest area of the sound card is the bass and drums side. There's nothing terrible here, but the punch and bottom end demanded by today's dance music is sadly missing from the pre-sets. Still, don't let that put you off – it's rare for a synth at this price to shine in this department, and it's certainly possible, with the wide range of sounds available on the card, to produce music in any style you want. The convenience of having the card sit comfortably in your Amiga must

GENERAL MIDI

The One-Stop Music Shop's sounds are organised according to the General MIDI specification. General MIDI is a relatively recent introduction to the MIDI world. It solves the problem which many MIDI users were encountering, whereby the music created on one synthesizer is not necessarily compatible with the instrument layout on another. For example, one synth might have a piano sound assigned to a certain program change number (a MIDI command which instantly brings up a pre-set sound on your synth), whereas another may have a harmonica. The result was that whenever you tried to play a song created on one synth through another, all the instruments could come out tragically wrong, and it would take a good deal of time trying to set the new synth up to play the same instruments on the same channels as the other. Now any General MIDI compatible synth will allocate each instrument type to exactly the same program change numbers. For example, sending program change number 16 to a General MIDI synth will always bring up a Vibraphone sound. Obviously, the sounds aren't identical, because each synth has a different sound-producing architecture, but you can be sure that the music will come out sounding as close as possible to the way you recorded it.

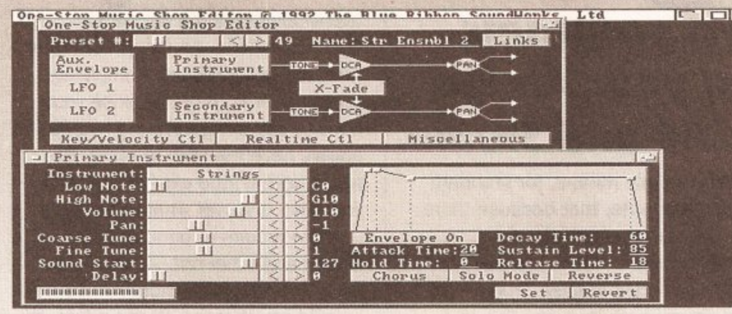


The MIDI File player makes it easy to load up any General-MIDI-compatible files and hear them played immediately.

Another advantage of General MIDI compatibility is the possibility of playing General MIDI files. These are songs and musical pieces written specifically with General MIDI in mind, and they enable you to simply load them into your sequencer, or the stand-alone MIDI File player which comes as part of the *One-Stop Music Shop* package, and hear them play back. The MIDI file player is also ARexx compatible, so you can issue instructions for it to load and play various pieces of music using ARexx scripts generated by other ARexx compatible programs. This is very useful if you want to use other people's music in your multi-media productions.

CLOSE TO THE EDIT

You are not just limited to the pre-set sounds inside the *One-Stop Music Shop*. A software editor is provided which enables you to edit many aspects of the sounds to create your very own pre-sets. If you've never edited synth sounds before, have no fear – the process is made a lot simpler using the software editor. Instead of you having to wade through lots of incomprehensible numbers and data fields, the editor presents the information using sliders and graphical representations of envelopes which you can manipulate with the mouse. Even if you don't know what you're doing, you can easily muck around with the on-screen controls and see what you come up with. It's an ideal way to learn the fundamentals of synthesizer sound design.



The editing software provided makes creating your own custom sounds a breeze – but they won't be played back the same way on another synth.

If you do extensively edit the sounds on the card, you may well find that it is no longer General MIDI compatible. For example, if you edit the piano sound to such a degree that it sounds more like a trumpet, then any General MIDI files which call up the piano won't sound correct. You can save edited sounds to disk, and load them whenever you need them, so you can always keep the General MIDI side of the synth on power-up.

On the other hand, you can save your edited banks as defaults, so that the card boots up exactly as you want it. This flexibility is a very powerful element of the *One-Stop Music Shop* and, especially with a hard drive, can make the accessing of edited sounds for different pieces of music an awful lot easier than with an external piece of MIDI equipment.

not be belittled, and it brings the ideal of a totally integrated multi-media environment closer to reality.

If you're looking for a new synth to add to your collection, this may not necessarily be the answer. There are hundreds of tone modules and rack-mountable synth expanders which can do the same task, and other synths may well offer more appropriate sounds for your kind of music. What this *does* offer is the convenience of being able to access top-quality synth sounds from within your Amiga, making the concept of integrated desktop multi-media a real possibility. In conjunction with the *Bars and Pipes Professional* sequencer it becomes even more powerful, offering the only current Amiga system which enables you to access more than the standard 16 MIDI channels – a major step forward in making music on the Amiga. AS

SHOPPING LIST

The One-Stop Music Shop £569.95
By: Blue Ribbon Soundworks Limited
From: Meridian Software Distribution, East House, East Road Industrial Estate, London SW19 1AH
☎ 081 543 3500

CHECKOUT The One-Stop Music Shop

Features
●●●●●●●●○○
Considered on its own, it provides no more than a normal synth module with the added convenience of sitting inside your Amiga. Integrated with *Bars and Pipes Professional*, it offers enormous potential.

Documentation
●●●●●●●○○○
An informative and well-laid-out manual, though I question the validity of starting the manual with how to edit the synth.

Installation
●●●●●●●○○○
An easy job to do, if you're not afraid to lift the cover off your Amiga, although there's no detailed walk-through in the manual.

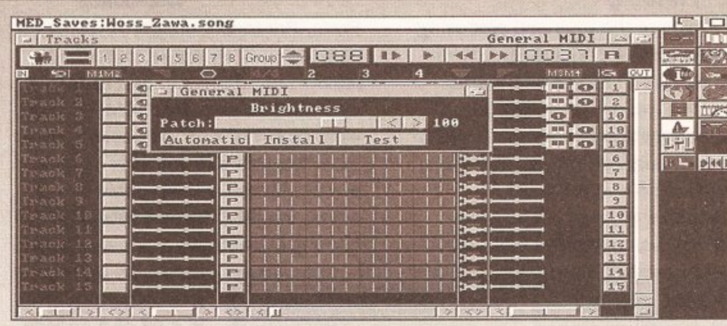
Value for Money
●●●●●●●○○○
It seems a lot to pay, and there are cheaper ways of making music with your Amiga, but many of its facilities simply can't be found elsewhere.

Overall rating
●●●●●●●●○○
An excellent system, which can transform your Amiga into an incredibly powerful workstation. Not necessarily the best sounds available at this price, but the convenience and flexibility of the system as a whole more than compensate for anything lacking in the sound department.

INTEGRATION

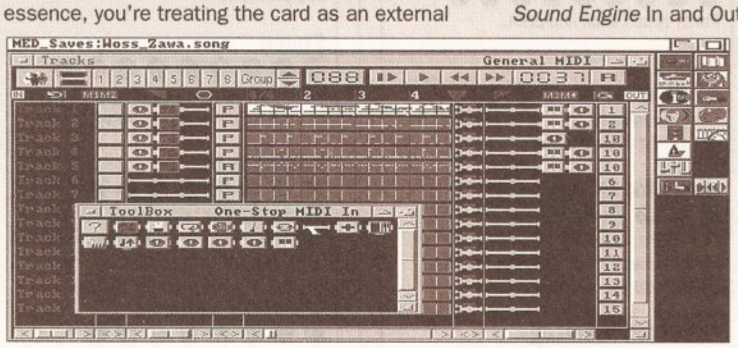
You can use the *One-Stop Music Shop* with any MIDI sequencer on your Amiga, although it does take a little fiddling about. You have to load the *LoopBack* program, provided with the card, before loading your sequencer. You also have to have a separate MIDI interface connected to the serial port of your Amiga, and then take the MIDI Out from your standard MIDI interface and connect it with a MIDI lead to the MIDI In of the *One-Stop Music Shop* interface. You can connect a keyboard to your Amiga in the usual way by plugging a MIDI lead from the MIDI Out of your keyboard to the MIDI In of your standard MIDI interface. In essence, you're treating the card as an external synth module which just happens to be sitting in your Amiga.

By far the best way of integration, though, is to use the card in conjunction with the same company's *Bars and Pipes Professional* sequencer. The floppy disk supplied with the card provides *One-Stop* MIDI In and Out tools and *Sound Engine* In and Out tools. These can be just plonked into a pipeline in any of *Bars and Pipes'* tracks to access the sound card, without any need for further connections – it's all done within the Amiga. It also frees up your normal MIDI interface, attached to the serial port, for sending out another 16 channels to any other external synths, samplers and drum machines you may want to use. This effectively gives you 32 channels of MIDI – a first on the Amiga – and enables you to produce incredibly complex musical arrangements and orchestrations.



There's a built-in patch slider tool which makes it easy to change selected sounds when using the One-Stop Music Shop.

Integration with *Bars and Pipes* doesn't stop there, however. Software accessories are provided which enable you to bring up the sound card's software editor, change sounds on the card using an on-screen slider, and manipulate the arrangements of sounds in memory, all from within *Bars and Pipes* itself. This way you can simply control the sound card and sequencer all from one incredibly powerful integrated program. Superb.



All thew tools you'll need to run The One-Stop Music Shop from within Bars and Pipes Professional are provided with the card.

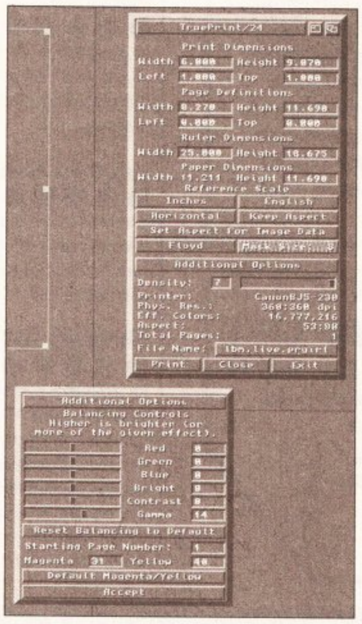
Printing with a purpose

Jeff Walker tests two programs designed to improve your Amiga printouts: TruePrint/24 and Studio.

The Amiga prints colours in 12 bits and shades of grey in 4 bits. That means it can print 4,096 colours and just 16 shades of grey, so you'll get your 256 colours out of *DPaint* okay (although they may not print exactly as they are on-screen) and your 16-greyscale hand-scans will print perfectly well. But without help the Amiga can't take full advantage of the latest mono and colour inkjets or 400/600 dpi laser printers. That's where *TruePrint/24* and *Studio Printer Software* come in.

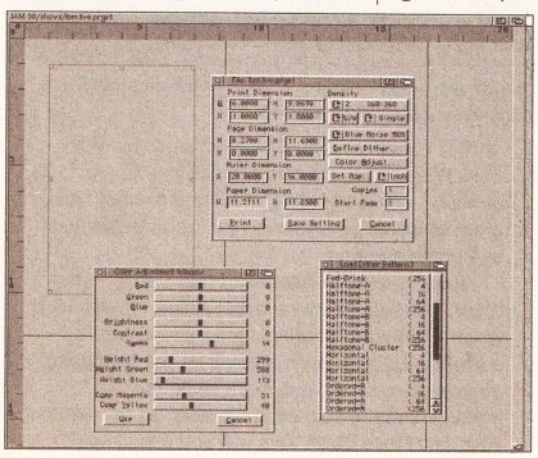
As the "24" after *TruePrint* will suggest, it can print pictures containing up to 24 bits of colour – up to 16.8 million colours – instead of the standard Amiga 12 bits. The same is true of *Studio*. Both programs achieve this remarkable feat by relieving the Amiga of the task and producing for themselves 256 shades of cyan, 256 shades of magenta and 256 shades of yellow; by mixing those shades together in patterns they can simulate printing up to 16.8 million colours (256 x 256 x 256).

Shades of grey contain equal levels of cyan, magenta and yellow (CMY), so this means, for standard Amiga printouts, that because there are only 16 possible equal combinations of CMY, you can print only 16 shades of grey. *TruePrint/24* and *Studio* both increase this to a possible 256 shades of grey.



***TruePrint/24* can enhance picture printing only – it won't help you get better WP or DTP printouts.**

Now of course this doesn't mean that your 16-greyscale hand-scanned pictures are going to print in 256 shades of grey – those shades must be there in the picture to be printed. Likewise, 32-colour pictures will still print in 32 colours through *TruePrint/24* and *Studio*. But for colour printing, even in 32 colours or fewer, you need some control over the way the dots of CMY are mixed, so that they produce colours that print as close to the on-screen colours as possible. Colour correction, in other words. The **Workbench Prefs/PrinterGfx** program provides a very rudimentary colour correction facility that, thanks in part to having only 16 shades each of CMY to play with, does not work particularly well. *TruePrint* provides you with more power. As well as being able to adjust the brightness, contrast and gamma of printouts, you can adjust the levels of red, green and blue. This is a bit of a strange system for a printing program because colours are not printed in red, green and blue, but experiment a little and you soon get the hang of it.



This is just half of the Studio software – the other half enables you to enhance not only picture printouts but the printed output from almost all Amiga software.

Studio provides even more control over colours, and it does it in CMYK (the K stands for black). In fact, *Studio* provides so much control that at first you can be overwhelmed by the seemingly endless options. As far as computer software is concerned, complexity always seems to be the price you have to pay for power, and you don't always have the time to learn. But again, with a little experimentation you soon discover what does what.

The results of printing from *Studio* and *TruePrint/24* are fairly similar. Both do an excellent job, but I would say that the *Studio* printouts have the edge once you've learned how to control the beast, which means reading and re-reading the manual, experimenting a lot, and making notes.

The big difference between *TruePrint/24* and *Studio* is that *TruePrint/24* can only print IFF pictures through the provided picture-printing program – no good at all for use with a word processor or DTP program. No printer drivers are provided with *TruePrint/24*, so it will only work with printers for which you already have a printer driver. *Studio* also contains a picture-printing program, which is very similar indeed to *TruePrint/24*. But the aces up *Studio's* sleeve are the Amiga printer drivers that come with it, providing support for all Hewlett-Packard DeskJets and LaserJets, and most Epson-compatible 24/48/64-pin/jet printers. The *Studio* preferences programs provide control over page sizes, typefaces, dither patterns, colour correction, and any program that prints in the normal Amiga way (which is 99.99% of all Amiga software) is able to take advantage of the enhanced features in the 100% Amiga compatible *Studio* printer drivers. Or to put it another way, as well as being able to print pretty pictures itself, *Studio* can also enhance the output from programs like *ProPage, PageStream, PageSetter, Wordworth, Final Copy, DPaint, Brilliance*, and many others. Both are good; this is great. AS

SHOPPING LIST

TruePrint/24 ....£69.99
By ASDG Inc, 925 Stewart Street, Madison, WI 53713, USA
Distributed in the UK by:
Meridian Software Distribution Ltd, East House, East Road Ind Est, London SW19 1AR.
☎ 081 543 3500

SHOPPING LIST

Studio Printer Software ..£49.95
By JAM,
75 Greatfields Drive, Uxbridge UB8 3QN.
☎ 0895 274449

CHECKOUT TRUEPRINT/24

Features
●●●●●●○○○○
Limited dither patterns, only RGB correction facilities instead of CMYK, and no printer drivers supplied for the likes of the new and cheaper laser printers and colour printers.

Documentation
●●●●●●●●○○
The manual will teach you a lot about printing and colours.

Ease of Use
●●●●●●●●●○
Pretty much click-and-print.

Speed
●●●●●●●●○○
Printout speeds are dictated mainly by the speed of your Amiga.

Value for Money
●●●●●●○○○○
You might be better off buying *ADPro*, which comes with this program as a saver module.

Overall rating
●●●●●●●○○○
Requires better drivers than come with the Amiga to get the best out of it.

CHECKOUT STUDIO

Features
●●●●●●●●○○
So many powerful features that it may frighten and confuse the beginner.

Documentation
●●●●●●●●○○
Good technical manual, but too little help for the inexperienced.

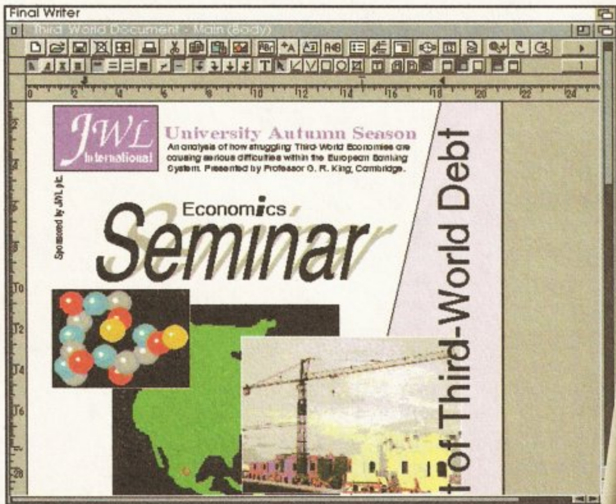
Ease of Use
●●●●●●●○○○
Simple when you know how, but it can take quite some time to learn what everything does.

Speed
●●●●●●●●●○
Very impressive. Can print megabytes of data in just a few minutes.

Value for Money
●●●●●●●●○○
Really gets the best out of Hewlett-Packard and Epson-compatible printers in both mono and colour.

Overall rating
●●●●●●●●○○
Gives the Amiga the printing power it deserves. I thought it was so good, I became the UK distributor for it.

You can't use Software this Powerful, and produce Documents this Good...



Actual screen display

Unless, you buy an expensive PC or Macintosh,™ a high priced Colour PostScript™ Laser Printer, and a complex, costly Desk Top Publishing Package...



Actual printed output

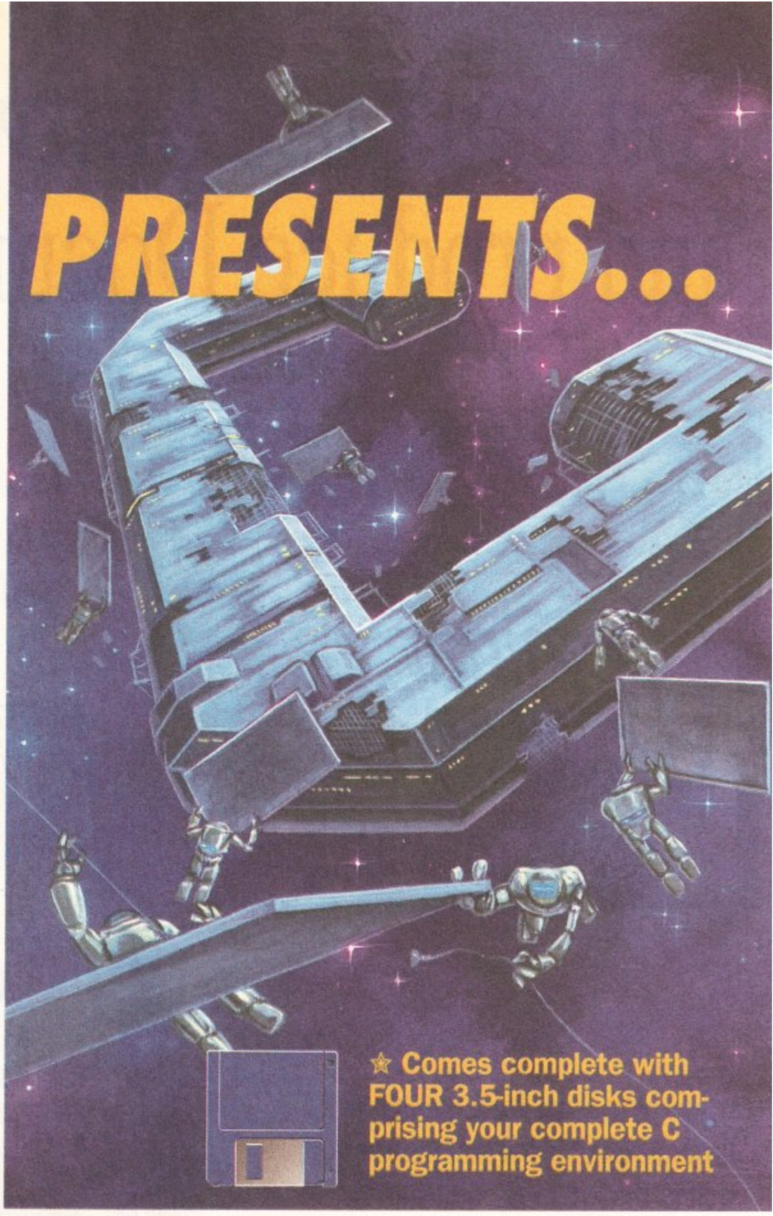
If you're looking for a quality Word Processor/Publisher that performs as well as this, you may well start by searching through PC and Apple™ Macintosh™ software catalogues.

Even then though, you probably won't find a program that will combine the very best in Word Processing *and...* easy to use integrated DTP type facilities.

You certainly can't find software for your Amiga that's capable of all this...

...or Can You?

AMIGA SHOPPER PRESENTS...



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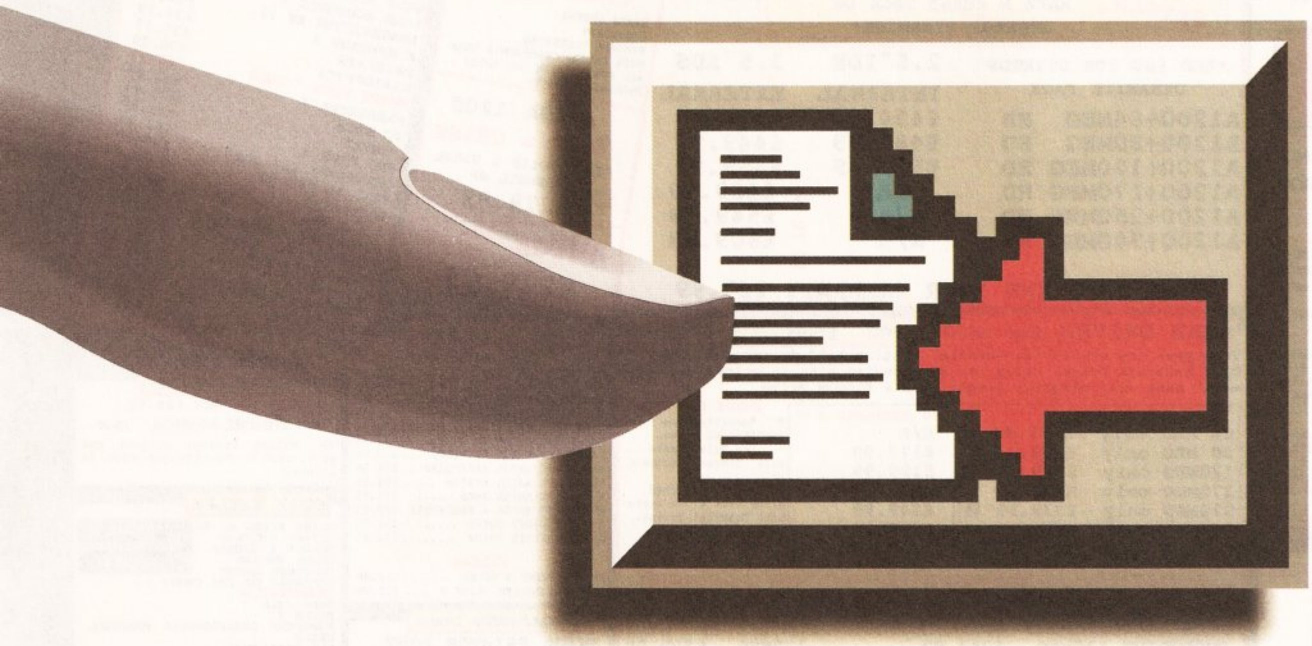
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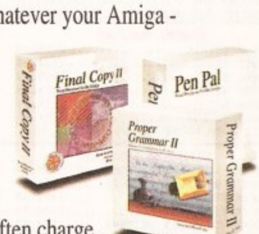
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MultiFaceCard 3

If, like me, you've got both a scanner and a printer that you use every day, you've got a problem. Both need to be plugged into the parallel port, and it is a real pain having to power down in order to swap cables. A switch box won't do: my Epson GT-6500 scanner insists on being connected directly to my Amiga's parallel port. What I need is another parallel port. And that's what the MultiFaceCard 3 has given me.

A simple command automatically added to my user-startup fools the Amiga into using the MultiFaceCard parallel port instead of its own, and because the scanner software dives straight at the hardware to access the Amiga's parallel port I haven't got to worry about telling software which port to use; it just happens. Not having to manually swap cables saves me about an hour or two per week in computer downtime, so the board will quickly pay for itself. Heck, I can even scan and print at the same time, another time saver.

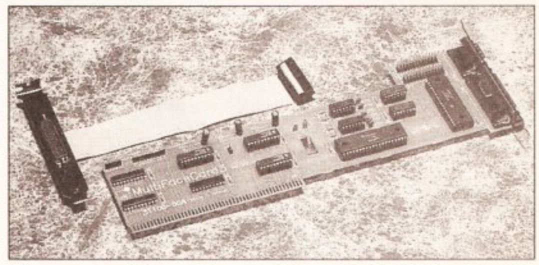
Also on the MultiFaceCard 3 are two serial ports. A 9-pin sub-D connector is mounted on the rear bracket beside the extra parallel port, and a further 25-pin standard serial port is provided on a cable and bracket that can be connected to the board and slotted into another bracket position. Alas, my A4000's Zorro slots are all spoken for, so if I want to use this extra serial port I will have to let the cable dangle loose out the back of the machine somehow. This will be less of a problem with the A1500/2000 of course because it has seven bracket positions.

Workbench 2.04 is a minimum requirement for the MultiFaceCard 3 software. If you are using Workbench 2.1 or better the software will install **DosDrivers**, otherwise it'll provide a file of mountlist definitions for you to use with the **Mount** command.

For controlling the extra ports there's just the one small CLI command, **MapDevice**, which is the aforementioned program that fools the Amiga into using the MultiFaceCard ports instead of the Amiga ones. In effect the **MapDevice** command is used to switch output between ports, although it is far more sophisticated than this. The serial ports have a special preferences program so that the baud rate (up to 115,200) and other protocols can be set. A special version of the *ParNet* networking software is included so that you can network two or more Amigas via the MultiFaceCard parallel ports instead of the standard Amiga parallel ports. The manual details the pinouts for the cable you will need to make.

Because the manual serves all versions of the MultiFaceCard and the SerialMaster board as well, it is a little confusing to say the least. But fortunately the MultiFaceCard 3 hardware and software are pretty simple to install. I was up and running with the extra parallel port in 15 minutes, although I think the serial ports and networking will take longer to master. And if you're into programming, developer notes and autodocs are provided.

Jeff Walker



Always wanted another parallel port? MultiFaceCard 3 can give it to you, plus serial ports, and networking!

CHECKOUT MultiFaceCard 3

Documentation
●●●●●○○○○○
Poorly translated from the German and way too technical for beginners.

Ease of Use
●●●●●●●○○○
Installation and initial operation are easy, but it takes a while to learn the extra intricacies of the software.

Value for Money
●●●●●●●●○○
Well worth the cost if you want the convenience of multitasking parallel/serial port peripherals.

Overall rating
●●●●●●●○○○
Two extra parallels and one extra serial might have been more useful than the other way around.

SHOPPING LIST

MultiFaceCard 3 .... £110
By: bsc büroautomation AG, Postfach 400368, 80703 München, Germany
Distributed in the UK by:
MicroPACE (UK) Ltd, Unit 10, Perth Trading Estate, Perth Avenue, Slough SL1 4XX
☎ 0753 551888

Megamouse and joystick switcher

Alfa Data products have a reputation for being well-made and reliable, and this new mouse and switcher live up to that reputation.

The mouse boasts ultra-high 400 dot per inch resolution – great for graphics or detailed drawing. The micro-switches too are of a very high quality, with a clean crisp click when you make a selection. There are a healthy five feet of cable, terminating in the standard 9-pin moulded plastic plug, and the design is intelligently ergonomic and comfortable. This is a first class piece of equipment, which, when one considers the price, must rank as one of the best value for money accessories for your Amiga.

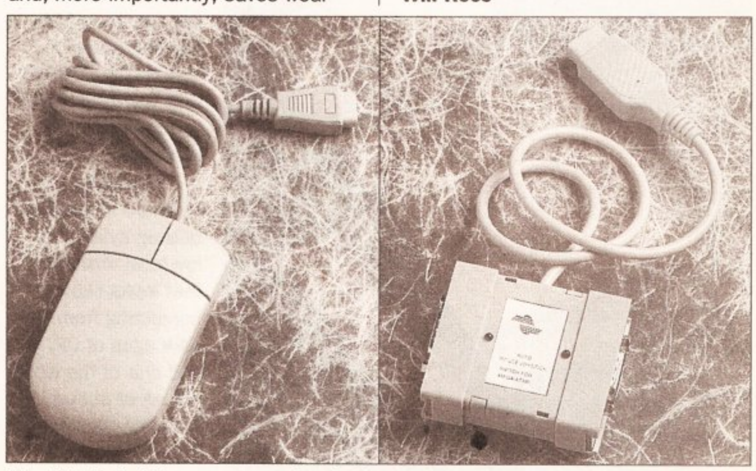
A matching unit is also available from Alfa Data which is primarily intended as an automatic switcher between joystick and mouse. This unit resembles the gender-changers often found on computer cables, and like those it has a 9-pin male port at each end. From the middle of the unit, however, emerges a one-foot cable terminating in a 9-pin female socket, intended for insertion into your Amiga's mouse port. Inside the unit itself is what I can only describe as a delightfully manufactured circuit board containing no less than three ICs and several assorted capacitors and resistors. There are two LEDs, one green and one red, which indicate which you have selected, mouse or joystick.

You simply plug mouse into one port and joystick into the other, then the cable into the appropriate port. The unit detects which device you want to use as soon as you press the left mouse button.

It works faultlessly, and adds a new dimension of speed and convenience to multi-player games – and, more importantly, saves wear and tear on the delicate connectors that you'd otherwise be putting at risk by repeated plugging-in and unplugging of leads.

I like both of these units so much I have ordered them. Take my advice, if a new mouse is on your shopping list and you want the added convenience of not having to struggle behind your Amiga amidst the plethora of leads and connectors, buy them both – they are absolutely first class.

Wilf Rees



The Alfa Data Megamouse and switcher look fairly ordinary. But this is by a long way the best mouse I have ever used on either my Amiga or PC. Both pieces of kit for under £28 must be one of the best bargains this Christmas.

CHECKOUT Megamouse & Switcher

Quality
●●●●●●●●●●
Exceptional finish.

Performance
●●●●●●●●●●
Both work impeccably.

Ease of Use
●●●●●●●●●●
Beautiful, smooth and nice to use.

Value for Money
●●●●●●●●●●
Astounding. The Microsoft mouse costs £99, and this is as good.

Overall rating
●●●●●●●●●●
Rodent need replacing? Look no further.

SHOPPING LIST

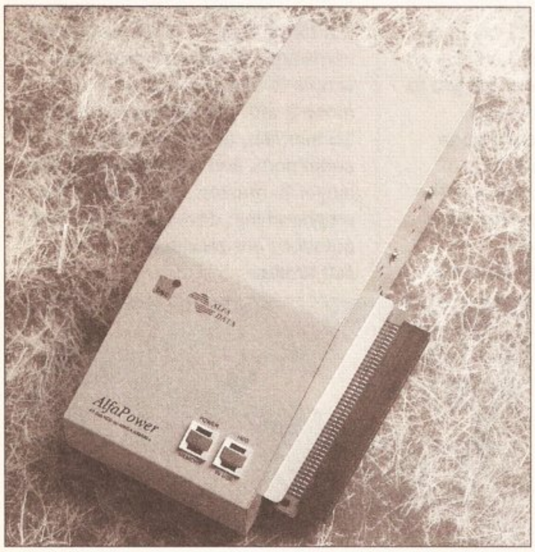
Alfa Data Megamouse £14.95
Mouse/Joystick Switcher .. £12.95
From: Golden Image, Unit 12A, Millmead Industrial Estate, Millmead Road, London N17 9QU
☎ 081 365 1102

Alfa Power hard drive

IDE hard drives are often frowned upon, but in fact IDE has a major advantage over SCSI – IDE drives and controllers are much cheaper.

For this reason, AlfaData chose IDE for a range of budget hard drives to market alongside their existing SCSI units. One or two drives can be mounted inside the thin steel case, relying on the Amiga for power and a draughty room for cooling.

Is this such a bad thing? Commodore recommend that all peripherals have their own power supply and experts would argue the case for cooling DRAM – which tends to develop permanent amnesia if it gets too hot. A fan is not available, but the extra PSU (recommended if RAM is fitted) should be considered at £39.95 extra. The RAM expansion – using ZIPs – can accept up to 8Mb in total; nothing less than you should expect from a modern design. However, lack of a fan may shorten the lifespan of these expensive modules (£69 per 2Mb).



The Alfa Power – a budget IDE-system hard drive, with some corners cut but a respectable turn of speed.

Software supplied includes a formatter and memory test utilities. At first glance, they look cheap – but few will find them a problem in practice. Documentation in German and English is set in the next point size up from microfiche: myopic buyers will have to resort to magnifying glasses. The translation is similarly average, but things go smoothly once you adjust.

On the down side, the attractive case has two tempting switches mounted right in harm's way. Respectively these enable the RAM and hard disk – effectively making a game switch. (Does anyone need these things now?) Although they're not easy to catch, little fingers could crash the machine or cause strange boot failures. Not a major criticism, but one to be aware of.

AlfaData have cut a number of corners to bring hard drives to the masses and you might be forgiven for thinking these would lose in terms of speed too. Surprisingly, quite the opposite is true and once the tedious process of formatting and configuration has been completed, the drive nips along at a respectable speed, though it's no GVP Impact. Pound for pound, the Alfa Power hard drive could be compared to the KCS dual-density, double-decker floppy drive that has a guaranteed capacity of 4Mb at around the same price (see opposite page). Think of that and you have a very cost-effective solution.

Mark Smiddy

SHOPPING LIST

AlfaPower HD

Controller only	£149
40Mb	£199
85Mb	£299
170Mb	£369

From: Golden Image, Unit 12a, Millmed Business Centre, Millmed Road, London N17 NQU.
☎ 081 365 1102

CHECKOUT ALFA POWER HD

Speed
●●●●●●●○○○
Respectable, if nothing to write home about.

Ease of Use
●●●●●●●●○○
Software doesn't look pretty – but it works well.

Construction
●●●●●●●●○○
Solid – especially considering the low price.

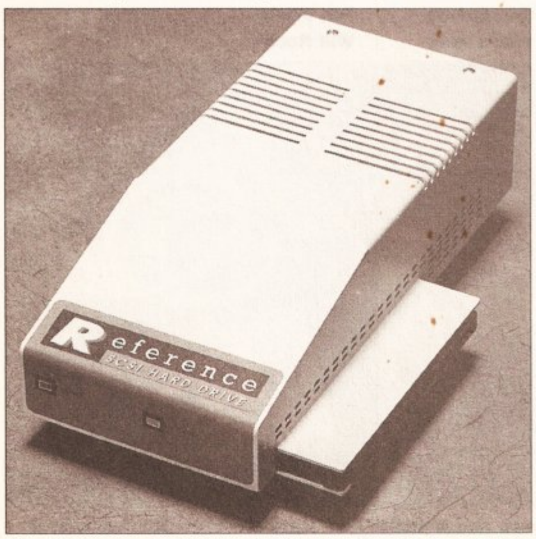
Value for Money
●●●●●●●●○○
Cheap, cost effective and simple.

Overall rating
●●●●●●●●○○
Probably the best budget drive around.

Reference hard drive

To compete in the overcrowded A500-compatible hard drive market, any new model has to be cheaper, faster or otherwise better than the competition. The Reference, a SCSI–DMA design inside a tough steel case, at least looks hardier.

From there on though, things start to go downhill at an alarming rate. The separate "dumb" power module has to be switched on before the Amiga, thus allowing the drive a few seconds to spin-up and, more importantly, ensuring that the interface is present on the bus before the Autoconfig kicks in. The upshot is that you have an extra supply to turn on or off in the correct sequence or the Amiga will crash. As far back as the original Commodore A590, most designs have had a remote control PSU switched on when the Amiga comes on line. Also, just like the A590, the Reference's cooling fan coupled with the drive make a very noisy combination.



The Reference hard drive for the A500 – it's tough but noisy, and the external "dumb" PSU is troublesome.

Supplied software includes a backup system, a low-level formatter that looks like something from the dark ages of CP/M, and one of the worst pieces of set-up software I have ever seen. Quite what possessed anyone to use Inovatronics *CanDo* 1.6 is beyond me. The software is not only slow and clumsy, but ugly beyond compare. The wild mixture of palette and styles would make Picasso blush and, more importantly, is almost unreadable on even a decent monitor. If that were not bad enough the low-level formatter proved unreliable, crashing the RDB on more than one occasion, meaning the whole process had to be repeated.

In use the drive proved generally unreliable when started from cold – although it worked well when running normally. All this could be forgiven if the Reference could claim to something in the speed stakes – but it fell short here too, in spite of the 100Mb hard drive which would normally give it an advantage over smaller units.

Like most modern expansions, the Reference is designed to accept extra memory – up to 4Mb. In light of this Evesham recommend the use of their own Autoconfig memory expansion. This is weak and highly inconvenient too. The complete (8Mb) Fast expansion really should be on the controller if the Reference were to be a serious competitor; it isn't. It may be tough, but little else can be said about this hotch-potch other than to ask if it is going to make any mark in the market at all.

Mark Smiddy

SHOPPING LIST

Reference Hard Disk with MRBackup Pro

40Mb	£219
100Mb	£299

From: Evesham Micros Ltd., Unit 9, St Richards Road, Evesham, Worcs. WR11 6TD.
☎ 0386 765500

CHECKOUT REFERENCE HD

Speed
●●●●●○○○○○
Not particularly outstanding.

Ease of Use
●●●○○○○○○○
Set-up software is temperamental and not for beginners.

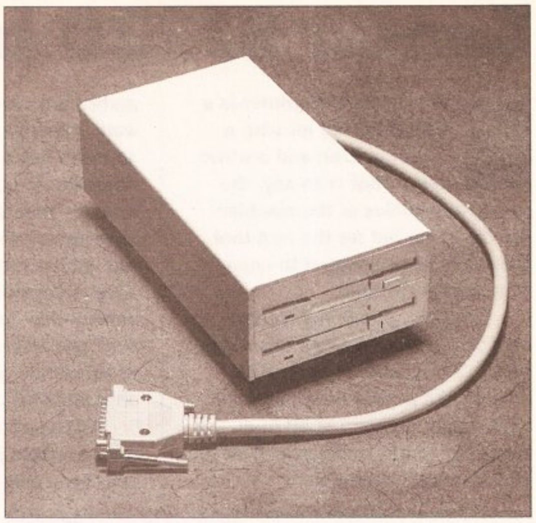
Construction
●●●●●●●●○○
Among the toughest boxes to date.

Value for Money
●●●●○○○○○○
It's cheap certainly, but doesn't offer much for the money.

Overall rating
●●●●●○○○○○
Think carefully and consider the other alternatives.

Drive to destruction

Mark Smiddy examines the KCS dual high-density disk drive – all hype, or the best thing since the non-stick frying pan?



Want a high-density disk drive for your Amiga? KCS's new dual HD drive can give you two of 'em in one unit.

In the launch issue of *Amiga Shopper* I was charged with the task of choosing a drive for all seasons. Given that all Amiga drives are based on a rigid electronic standard, there is little to separate them. To resolve this, a specially-designed series of tests subjected the mechanisms to a variety of extreme physical and environmental stresses.

Three years later, little has changed. Most Amigas are still fitted with a limited double-density drive and the hardware is incapable of supporting the universally accepted high-density (HD) standard found on other platforms.

Power Computing were the first with an answer – the XL HD drive (reviewed in *Amiga Shopper* 29 – see page 106 if you want to order a copy). But what's the use of a standard that isn't supported by the vast majority of Amigas? Two uses come to mind: first, backing up a hard disk will require fewer disks (although there is little saving in cost terms) and second, it allows you to read and write high-density PC disks.

Netherlands-based Kolff Computer Supplies, best known in the Amiga community for their ground-breaking Power PC board, have now also addressed the problem, and come up with some interesting solutions. Their dual HD drive has been on the cards for a long time – but it was worth the wait.

A clever marriage of intelligent software and ingenious hardware results in a double-decker drive that's not only measurably faster than any comparable mechanism, but brings a Workbench-3-like filing system to every machine running Kickstart 1.3-plus and PC compatibility to all. Thanks to real-time compression, storage capacity is quadrupled to beyond 4Mb on an HD disk (best case) and increases the read speed an average exceeding 300% when compared to a standard machine. Counting these features, the double decker is not two drives, but eight rolled into two.

Software supplied with the unit includes a driver, installation program, replacement for the standard *DiskCopy*, extra drivers for the KCS Power PC card, simple hard drive backup, track display and special formatter. The formatter currently supports no less than 12 different capacities from 720K to 4Mb-plus. Plus facilities for FFS, International and DCFS filing systems – all usable on 1.2 machines! (FFS or Fast Filing System was introduced in AmigaDOS 2; Directory Cache Filing System or DCFS arrived with AmigaDOS 3 to provide faster directory reads.) It's a pity there isn't enough room to list full details here.

PC disk compatibility is internal – so there's no need for PC-Amiga file transfer software like *CrossDOS*, *MultiDOS* or *MessyDOS* – and the standard hardware is compatible with Cyclone T2, Blitz and Syncro Express hardware back-up systems. The nearest competitor requires at least Kickstart 2 to work and Kickstart 3 for full functions, and cannot achieve the speed of a standard machine.

Practically speaking it is difficult to find something the KCS system doesn't do. The software currently shipping at version 1.70 is due for upgrade before the end of 1993 and KCS promise better and faster compression with an improved hard drive backup sub-system. KCS plan to include an extra software driver to add the compression system to existing hard drive partitions – effectively doubling the storage capacity of all non-boot partitions!

Also for this version will be the ability to read and write two disks as a single device (or volume) – doubling the possible capacity to over 8Mb (yes, eight) for HD disks. Although it will never replace a real hard drive, this makes it an even more attractive and cost-effective solution for media-greedy applications. In this sense, it could even be compared to a small removable hard drive – slower, yes, but a lot cheaper. Last, but not least, is a replacement for the slightly tacky interim manual. All registered users get all this automatically at no extra charge.

No review would be complete without some criticism – and the KCS drive is no exception. It's let down by a poorly designed plastic case and a rear-mounted mode switch that's susceptible to little fingers. Also, the inclusion of copier hardware will furrow the odd brow, I have no doubt. On the software side, it would be nice if the compressed drives appeared as a straightforward **dfx:** rather than **CMx:** – but this is a minor irritation.

The bottom line is that KCS have done for floppy drives what GVP did for hard drives, and others will be hard-pressed to better it. This is the most innovative and singularly useful product I have seen since *Amiga Shopper* began. Save up, sell the wife and take out a second mortgage on your granny: your Amiga is crying out for one. AS

THE BENCHMARKS

Our tests were compiled using an extended, high-speed file copier, duplicating a mixture of 56 various length files and several directories comprising over 740K of mixed data. The KCS compressed drive timings shown for the 25MHz A3000 model, while not achievable on slower machines, are representative of the software's performance.

The table shows a selection of typical benchmarks. Relative percentages are based on a watershed Commodore internal floppy with a standard filing system on an Amiga A3000 running Kickstart 3.

Drive	Read	%	Write	%	F/S	Capacity	Manuf'r
DF2:	37,805	209	21,110	344	FFS	1.76 Mb	KCS
CM2:	35,970	199	17,559	286	DCFS	4.00 Mb	KCS
DF2:	33,228	183	12,909	210	OFS	1.76 Mb	KCS
DF0:	18,072	100	6,123	100	OFS	0.88 Mb	CBM
DF2:	17,073	94	4,453	72	FFS	1.76 Mb	Power
DF2:	16,321	90	3,791	61	OFS	1.76 Mb	Power

SHOPPING LIST

KCS Dual High-density Drive £199
By: Kolff Computer Supplies
From: Bitcon Devices Ltd., 88 Bewick Road, Gateshead, Tyne & Wear NE8 1RS.
☎ 091 490 1919

CHECKOUT KCS DUAL HIGH-DENSITY DRIVE

Speed
●●●●●●●●●○
Drool over those results and wonder how you're managing.

Documentation
●●●●●●○○○○
Interim manual is cheaply produced, but it reads well enough.

Ease of Use
●●●●●●●●●●
Simple, logical and transparent – a delight to use.

Durability and Construction
●●●○○○○○○○
Treat with care – it won't take the knocks.

Value for Money
●●●●●●●●●○
Eight drives in one – how can you go wrong?

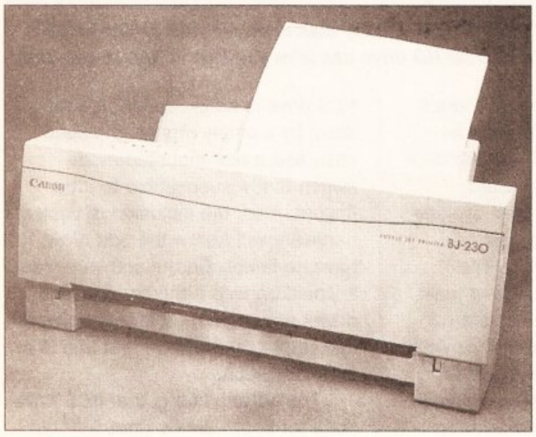
Overall rating
●●●●●●●●●○
Enough said.

Canon BJ230 bubble jet printer

Essentially, this printer is a BJ200 bubble jet with a longer platten and a wider case. That is to say, the actual mechanics of the machine are the same but for the fact that they have been adapted to cope with a wide carriage.

This may not seem important, especially since it makes this model around £60 dearer than its little brother, but it does have potential uses. Laser printers, apart from very expensive ones, are limited to an A4 format, which makes them particularly useless for spreadsheet work. Although most spreadsheet software has an option in the print requester to output in "landscape" format – that is, with the image sideways on the page – this means you get the width and not the height. Sure, ordinary dot matrix printers can handle wide carriage, but then you don't get laser quality resolution, which can be quite important, even on a table full of numbers.

As you would expect from a Canon bubble jet, the mechanism is quiet (you only know that it is on by the rustling noise the paper makes as it is sucked in), the footprint is small and the output fairly fast. You always have to take manufacturers' performance claims with a pinch of salt – it is more like three minutes per page than three pages per minute. (This isn't really the printer for people in a hurry.) At that speed it would take rather a long time to deplete the stockpiles held in the automatic sheet feeder, which can hold up to 80 pages.



The Canon BJ230 bubble jet printer – the winning combination of bubble jet quality plus a wide carriage.

The print mechanism itself is very accurate – it seems to be of a much better quality than the original designs which appeared with the BJ10. The print quality seems to be much less dependent on the type of paper used, and with the software provided you can get a very decent range of shades.

The only real problem with the BJ230 is that if you use full carriage a lot, you are going to run out of ink a lot faster. Maybe a refill does only cost a couple of quid, but you don't really want to be fiddling around with nasty bottles of black stuff every hundred pages or so. Perhaps the time has come to start making the cartridges too just that bit bigger.

Nick Veitch

SHOPPING LIST

Canon BJ230 .... £379.99
By: Canon
Distributed by: Phoenix Computer World, Unit 2, York Towers, 383 York Road, Leeds LS9 6TA.
☎ 0532 350091

CHECKOUT CANON BJ230

Features
●●●●●●●●○○
Three print modes give a reasonable compromise between speed and quality. Otherwise it's the standard 360 x 360 dpi and excellent greyscales you would expect from a Canon BJ.

Documentation
●●●●●●○○○○
The manual covers everything in extreme (sometimes tedious) detail, but it's always handy to have all the info.

Ease of Use
●●●●●●●●○○
Built-in Epson emulation, and an appropriate driver is supplied.

Flexibility
●●●●●●●●●○
Many will welcome the wide carriage.

Value for Money
●●●●●●○○○○
A reasonably-priced solution to the conundrum of having a wide-carriage printer with laser-quality output.

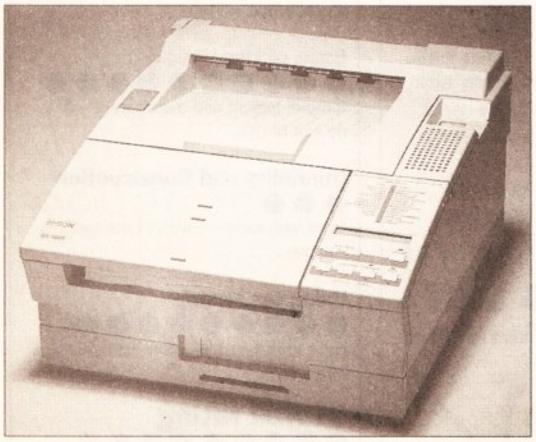
Overall rating
●●●●●●●●○○
I'd heartily recommend a Canon bubble jet to anyone, but if you don't need the extra inches, go for the cheaper BJ200 or the more expensive BJ600c, possibly the best-value colour printer available.

Epson EPL-5000

The EPL-5000 is Epson's latest laser printer. Lasers, as any fule kno, give you much better quality results than dot matrix printers, and have the added advantage of not waking the dead with the noise.

Epson have certainly done some serious work on the design of this printer. It's about two feet long and a foot high, with a panel on the front which lifts to reveal the paper tray, which can hold up to 250 sheets of A4. The paper feeds through from this and ends up on the top of the printer, although you can get an optional tray which means that the paper isn't bent on its passage through the printer. This means that it can cope with thicker paper and overhead projector transparencies, which don't like being bent after printing.

The EPL-5000 can emulate three printers: the Hewlett Packard Laserjet, EpsonLX and EpsonQ. All three of these have Workbench drivers as standard, so setting up the printer shouldn't pose a problem. It comes with a parallel interface as standard, which includes a 32K buffer to speed up the flow of data (slightly).



Epson's EPL-5000 laser printer emulates three printers with Workbench drivers, so it's easy to get going.

Print quality from this printer is superb, with solid blacks and excellent greyscale rendering. Add a printer enhancement program such as *TurboPrint* or *Print Studio*, and the quality is even better. The maximum resolution is 300 x 300 dots per inch, as with most laser printers.

As you'd expect, working at this sort of resolution requires a lot of memory on the printer, and the half a megabyte included by default isn't really enough for full-page desktop publishing work. This can however be expanded up to a hefty 6.5Mb, which is easily enough for high-resolution full-page DTP work. Epson claim a speed of up to six pages per minute, but if you're dealing with graphics (and DTP pages are printed as graphics) this is more likely to be six minutes per page. Pure text is extremely fast, and I've got no dispute with Epson's figure once it's worked up a head of steam.

Overall, this is a very impressive printer. Laser printers are rapidly becoming more affordable, and this one certainly won't do anything to tarnish Epson's reputation. There's no option to add PostScript to this printer, although it can use Hewlett Packard expansion cards for fonts and so on. If you don't need or can't afford PostScript, this printer is definitely worth considering.

Richard Baguley

SHOPPING LIST

Epson EPL5000..................... £880
By: Epson UK Ltd, Campus 100, Marylands Avenue, Hemel Hempstead, Herts. HP5 7EZ
☎ 0442 61144

CHECKOUT EPSON EPL5000

Features
●●●●●●●●○○
Emulates a Hewlett Packard Laserjet IIP, EpsonFX and EpsonLQ.

Documentation
●●●●●●●●○○
Epson's usual high standards have been maintained. Includes an excellent glossary.

Ease of Use
●●●●●●●●○○
The included HP emulation means that you don't have to use any external drivers.

Flexibility
●●●●●●●○○○
It's a good laser printer. What more do you want?

Value for Money
●●●●●●●●○○
Reasonably priced. Expect to see it for around £600–£700 from most retailers.

Overall rating
●●●●●●●●○○
A good, solid printer. It's not the fastest or best laser on earth, but it's affordable and reliable.

Star LC24-30

New from Star is the LC24-30, a 24-pin colour dot matrix. It's certainly good value for money in the pounds per pound stakes, weighing in at just under six kilograms and standing around seven inches high (not counting the sheet feeder) – so it certainly can't be described as a portable. Put it next to Star's dinky new SJ-144 and you'll see what I mean.

A single-sheet feeder is built-in, which can hold up to 55 sheets, although this does depend on the thickness of the paper. Fanfold paper can also be used, and this feeds through from the back of the printer. The control panel on the front has three buttons, using which you can load paper, change fonts, feed paper through or feed the dog.

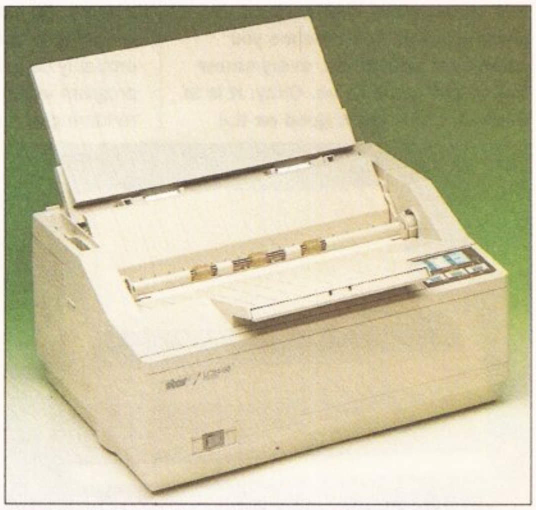
Also included is a cut-down version of *Print Studio*, which includes a driver for the LC24-30, and this is very easy to install using the Commodore Installer utility. This gives you a much greater degree of control over the output than a conventional Workbench printer driver, and includes a good range of dither patterns. As with all software of this type, the way to get the best results is to experiment.

The LC24-30 does have a "Quiet" mode, but it's still a noisy printer and using the Quiet mode slows down the print speed. The quality of the output is very good, although there is a certain degree of banding on the printouts, caused by the paper being fed on the wrong distance, meaning that some strips are either printed twice or not at all. You can lessen the amount of banding by adjusting the printer, but you can't eliminate it completely.

The LC24-30 uses the normal four-colour ribbon, and the colours are fairly good. They aren't particularly bright, but there is a good range of tones in there, and some experimentation with the "**Colour Adjustments**" window of the **StarPref** program would improve this.

This is certainly a heavy-duty printer. It's well built, the print quality is good, and the text output is pretty fast (around 80 cps in letter mode). Unfortunately, the noise is extremely irritating, and would begin to grate after the first few pages.

Richard Baguley



The Star LC24-30 is a dot matrix with built-in colour capability, but it is noisy and certainly no lightweight.

CHECKOUT Star LC24-30

Features
●●●●●●●○○○
Can emulate both Epson and IBM printers, although the inclusion of *Print Studio* makes this somewhat unnecessary.

Documentation
●●●●●●●○○○
Gives you all the technical gen you're likely to need, in a reasonably easy-to-find form.

Ease of Use
●●●●●●●●○○
The *Print Studio* software means that it's very easy to set up.

Flexibility
●●●●●●●○○○
The good range of fonts and built-in single sheet feeder are extremely useful.

Value for Money
●●●●●●●○○○
The list price is £350, but expect to see it for around £300 in the shops.

Overall rating
●●●●●●●●○○
A good, solid colour printer which looks as if it could take the knocks and can produce good results, although it's a bit noisy for my liking.

SHOPPING LIST

Star LC24-30 .... £351.32
By: Star Micronics, Star House, Peregrine Business Park, Gomm Road, High Wycombe, Bucks. HP13 7DL.
☎ 0494 471111

Epson LQ-100 dot matrix printer

Dot matrix printers aren't exactly cutting-edge technology these days, but new models keep appearing. The latest from printer pioneers Epson is the LQ-100.

They've certainly had a rethink for this model. It's nearly completely enclosed, with the printing area covered by a removable plastic cover, which means it's significantly quieter than your usual dot matrix printer – the normal whine is still there, but much less loud.

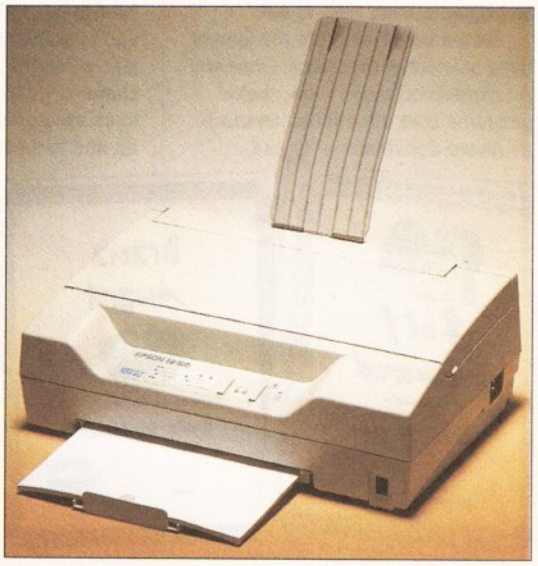
Paper is fed into the machine by two possible routes: either through a single-sheet slot in the bottom of the printer or from a cassette at the front which can hold up to 50 sheets. The former can also be adapted to print on continuous paper with an optional tractor feeder.

The various settings (such as which font to use and loading paper) are controlled through two buttons on the front. The usual DIP switches are not present on this model, because Epson have assumed that the printer will be mostly controlled from the computer. Unfortunately, there isn't a driver for the Amiga which takes advantage of the new "Esc P2" control codes, but fortunately these are compatible with the standard Epson control codes used by the Workbench drivers. Unfortunately again, you're stuck with the old Workbench Epson Q driver, because Epson haven't included a Workbench driver with this printer, though it's worth trying printer enhancement programs such as *TurboPrint* or *Studio* (see page 72), which have support for some of the newer Epson Printers.

Like all 24-pin printers, the LQ-100 is capable of up to 360 dots per inch, and Epson claim a reasonable speed of 200 characters per second in draft mode. Put it into letter quality, though, and it drops significantly to around 60 cps. The text quality is very good, and seven fonts are built in to the printer.

Graphics, unfortunately, is another matter. The results are muddy, with some rather nasty banding. Some of this can be removed by careful adjustments to the paper feed mechanism, and the tonal range can be improved by using a printer enhancement program, but the quality is never going to be anywhere near what you can get with a bubble jet or inkjet printer.

Richard Baguley



The Epson LQ-100's enclosed casing muffles the noise you'd normally expect from a dot matrix printer.

CHECKOUT Epson LQ-100

Features
●●●●●●○○○○
Nothing particularly outstanding, I'm afraid.

Documentation
●●●●●●●●○○
Up to Epson's usual high standard.

Ease of Use
●●●●●●●○○○
Just plug it in and you're off.

Flexibility
●●●●●●○○○○
A basic, but solid, printer.

Value for Money
●●●●●●○○○○
Aimed at the budget end of the market.

Overall rating
●●●●●●●○○○
It's certainly a reasonable printer at a reasonable price, but nothing really distinguishes it from the many others in this price bracket.

SHOPPING LIST

Epson LQ-100 .... £262.52
By: Epson UK Ltd, Campus 100, Marylands Avenue, Hemel Hempstead, Herts. HP5 7EZ
☎ 0442 61144

Fujitsu DL1150 dot matrix printer

Now with wires instead of pins, can the dot matrix make a comeback against the bubblejet brigade? Fujitsu think it can, and if nothing else I have to say that this is possibly the best documented printer I have ever seen. Apart from the 150 pages of user manual, there is also a programmer's handbook of around 400 pages, detailing every possible function and operation that this printer could ever perform, every piece of maintenance you could ever want to do, every screw that might come loose. Okay, it is in German, but it looks good on the bookshelf, and hey, isn't it about time you learnt a second language anyway?

A combination of fonts and styles give you a total of 15 different typefaces for text mode, although many of them are only available in the NLQ mode. Besides, a large number of resident fonts is no longer a big selling point. If you are printing out some high-speed text, it doesn't really matter what it looks like as long as you can read it, and if you are printing out a letter you'll probably be doing it through a program which uses a graphic rendering of a scalable font anyway.



The Fujitsu DL1150 dot matrix printer – well, wire printer, really – has a quite usable colour option.

If speed is your thing, the DL1150 can produce a fair 200 characters per second, but it is not the most legible draft mode I have ever encountered on a dot matrix. You will almost certainly have to splash out on some ear defenders as well – perhaps I have just become too used to working with lasers and bubble jets, but the Fujitsu managed to drown out the office CD player, which is a bad sign.

There is a colour option, and it does produce surprisingly reasonable results – for a while anyway. The trouble with colour ribbon printing is that the ribbon is never long enough. The colours always migrate across the bands of the ribbon (in use, not in storage), so by the time you get to the third or fourth pass of the ribbon all the colours are brown anyway. Dot matrix printers have never been any good at colour though, so it is unfair to labour this point.

The Fujitsu DL1150 does come with the relevant Amiga drivers, so it is a very simple matter indeed to get it up and running with any software that supports a Preferences printer. There are a couple of fallback emulation modes too if you get into any difficulty.

Nick Veitch

SHOPPING LIST

Fujitsu DL1150 dot matrix printer £334.88
(colour version £386.58)
By: Fujitsu, 2 Longwalk Road, Stockley Park, Uxbridge, Middlesex UB11 1AB.
☎ 081 573 4444.

CHECKOUT FUJITSU DL1150

Features
●●●●●●○○○○
Reasonable 360 x 180 dot-matrix output. Colour mode can give results varying from poor to quite good.

Documentation
●●●●●●●●○○
Pretty good manual with full information on emulation modes and everything else you could expect. Shame the programmer's / maintenance handbook isn't in English...

Ease of Use
●●●●●●○○○○
Comes with its own driver, but then it doesn't tell you how to install it. Pretty basic though.

Versatility
●●●●●●●●○○
Okay for speed, reasonable for colour.

Value for Money
●●●●●●○○○○
Far from the cheapest model on the market, but it looks as though it could outlast many of the other models (though you may go deaf).

Overall rating
●●●●●●●●○○
A well-built, sturdy workhorse that can output decent quality pages. The colour option is quite usable if you don't use colour all the time or you are prepared to buy lots of ribbons.

Award Construction Kit

You're kidding. I mean, if you've done something worthy of receiving an award, wouldn't you expect to be given a decent award certificate you could hang on the wall, rather than a trashy-looking printout from *Award Construction Kit* with pictures and words that are all jagged around the edges?

Award certificates are the kind of thing at which *Professional Draw* and *Art Expression* excel. Okay, these programs cost three times as much as *Award Construction Kit*, but *PageSetter 3* doesn't, and it will even print at the highest resolution possible on your printer, without jaggies around the text and pictures.

The only thing *ACK* has going for it is ease of use. You can produce a certificate in under a minute, while in *PageSetter 3* it might take five to ten minutes to import and position everything. With *PageSetter 3* you don't get the range of border and text styles that come with *ACK*, but shareware clip art and Compugraphic fonts are not expensive, and all the art and fonts in *ACK* are available from EMC on other disks.



Reckon there's a demand in the Amiga market for a program that produces printouts like these?

ACK provides about 50 standard award topics – sports, school, family and so on – or you can make up your own. Various areas of the page are designated to take either text or a graphic. You have quite a degree of freedom over text style, and 11 ornate borders and five seals are provided. You choose styles and so on by number from various control panels. Dead simple. But it's *all* ragged round the edges. The boot sequence for the floppy doesn't even run **SetPatch**, just a few **Echos**, **Setmap**, **LoadWB** and **EndCLI**. Two hard drive installation scripts are provided so you can install the program on to either **dh0:** or **dh1:**. If your hard drive is called something else, you will have to do it by hand (though the manual does give step-by-step instructions). And the two installation scripts provided both automatically load **sys:s/startup-sequence** into *Ed* so you can add some Assign commands to that file. What a bloody stupid and irresponsible thing to do!

This is Amiga software at its very worst. It's not even up to shareware quality. There are a million better things to spend £30 on. Like a week in Sarajevo, for example.

Jeff Walker

SHOPPING LIST

Award Construction Kit £29.99
By E M Computergraphic, 8 Edith Road, Clacton CO15 1JU
☎ 0255 431389

CHECKOUT AWARD CONSTRUCTION KIT

Features
●○○○○○○○○○
All it does is produce very amateur-looking award certificates.

Documentation
●○○○○○○○○○
Trashy 12-page A5 booklet.

Ease of Use
●●●●●●●●●●
An unborn child could use it.

Speed
●●●●●●●●●●
But then it never takes long to do next to nothing.

Value for Money
●○○○○○○○○○
Why bother when you can buy *PageSetter 3* for a few pounds more and do it properly?

Overall rating
●○○○○○○○○○
But then I guess simple things please simple minds.

GVP WORLD CLASS AMIGA PERIPHERALS

NEW! - 50MHz A1200 ACCELERATOR + FEATURE CONNECTOR

VIDEO GENLOCK
FOR ALL AMIGAS



This extremely high quality Amiga genlock, from GVP, has an intuition-based software control panel with full ARexx and command line interfaces. Easy to use the G-Lock genlock features many sophisticated attributes among which are:

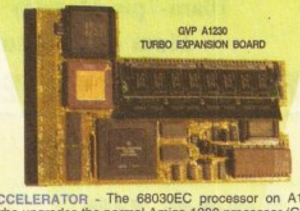
- Two Composite Video Inputs or S-Video (Y/C) Input
- Simultaneous Composite & S-Video and RGB Output
- Video Processor - Real Time Software Control of Video Attributes (Sharpness, Gain, Brightness etc)
- ARexx Compatible
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- Full Audio Support

AMIGA GOLD FORMAT 94%

G-LOCK ~~£349~~ **£299** INC VAT - VID 2500

ACCELERATORS
FOR AMIGA 1200

68030EC - 40MHz RAM/FPU UPGRADE



ACCELERATOR - The 68030EC processor on A1230 Turbo upgrades the normal Amiga 1200 processor (CPU). The new version is nearly nine times the speed of the 68020 in standard A1200s.

32-BIT RAM - The A1230 Turbo can have up to 32Mb of high speed 32-bit RAM.

MATHS CO-PROCESSOR - The A1230 Turbo can be fitted with a maths co-processor.

- 68030EC processor running at 40MHz
- Easy Fitting Trapdoor Expansion - Doesn't Void Your Warranty
- Up to 32Mb of 32-bit RAM
- Doesn't Disable PCMCIA Interface
- Optional 68882 Co-Processor - much faster than the obsolete 68881



40MHz 68030EC ACCELERATOR + RAM CARD & OPTIONAL FPU

0Mb RAM NO FPU	4Mb RAM NO FPU	4Mb RAM 40MHz FPU
£249	£379	£499
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68030 - 50MHz RAM/FPU + FEATURE CONNECTOR

The new GVP A1230-II is the most advanced accelerator for the A1200 yet.

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- Built-in Memory Management
- Optional 50MHz FPU
- Up to 32Mb 32-bit RAM
- Unique Feature Connector

The new A1230-II has a custom feature connector which allows a whole range of state-of-the-art Amiga peripherals to be attached.

The first of these is a SCSI interface called the A1291, and is GVP's fastest SCSI controller yet. It features:

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- Faaast ROM Controller
- High Speed, Unique DPRC Technology for Direct HD to Memory Transfer

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FOR A1500/A2000/A3000/A4000



EGS Spectrum is the answer to all your 24-bit graphics card requirements. It is a high performance, high resolution, 24-bit board that will take any Amiga 1500, 2000, 3000 or 4000 beyond AGA! But the hardware is only half of the picture. Without quality software, your investment will be wasted. Not only does GVP's own award winning graphics application ImageFX fully support EGS Spectrum, but also, using a Workbench driver, nearly all existing Amiga Workbench compatible applications will also work on and support the EGS Spectrum system.

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EGS SPECTRUM

1Mb RAM	2Mb RAM
NEW! £349	NEW! £399
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FOR A1500/A2000/A3000/A4000



The HC8+ is a high speed hard drive & RAM card which can also be used to increase your Amiga's RAM by up to 8Mb RAM.

A FULLY FEATURED SCSI INTERFACE FOR A4000s

- High Speed DMA SCSI Controller Can Handle upto 7 Devices
- Ultra Fast Access SCSI Hard Drive Option - See Below
- Supplied Unpopulated the HC8+ can be Upgrade to Give You up to 8Mb of FAST RAM - See Below for Details
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HC8+ HARD DRIVE CARD

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—	~~£279~~	~~£349~~	~~£429~~
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FOR ALL AMIGAS

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ACCELERATORS
FOR AMIGA 1500 & 2000

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GVP offer a range of A1500/A2000 accelerators that simply outstrip the competition for speed and specifications.



SPECIAL OFFER SAVE £135! 42Mb QUANTUM HARD DRIVE + MOUNT KIT HAR 2043 ~~£234~~ **£99** INC VAT
ONLY WHEN PURCHASED WITH G-FORCE ACCELERATORS SHOWN BELOW

G-FORCE ACCELERATORS	030 40MHz	030 33MHz
Speed MIPS*	12.1	30
Processor	68030EC	68040
Maths Co-Pro.	68882 included	In 68040 processor
Std 32-bit RAM	4Mb	4Mb
Max 32-bit RAM	16Mb	64Mb
Extras	SCSI	SCSI Ser/Par
PRICE	£699 INC VAT - UPG 0430	£1299 INC VAT - UPG 0740

*MIPS: Millions of instructions / second, a normal Amiga runs at ·87 MIPS

SCSI/RAM EXPANSION
FOR THE AMIGA 1200

OPTIONAL 68882 FPU



Adding RAM or a hard drive to your Amiga 1200 will have a considerable impact on its speed. The GVP SCSI/RAM allows you to enhance your Amiga 1200 with both. Its SCSI hard drive interface is one of the fastest, whilst its 32-bit RAM upgrade is based on the same technology featured in the best-selling A1230.

- Built-in, SCSI Hard Drive Interface - Enables 2.5" SCSI Hard Drives to be Connected Inside the A1200 Casing
- Optional 8Mb of 32-bit RAM
- Optional 68882 Maths Co-processor

SCSI/RAM BOARD
NOW INCLUDES SCSI KIT FREE OF CHARGE

0Mb RAM	4Mb RAM - NO FPU	4Mb RAM + 33MHz 68882 FPU
NEW! £149	NEW! £349	NEW! £399
INC VAT - HAR 1200	INC VAT - HAR 1204	INC VAT - HAR 1233

MULTI-MEDIA AUTHORING
FOR A1500/A2000/A3000/A4000

ALL-IN-ONE GRAPHICS CARD



Impact Vision 24 is a fully featured video card. Unlike other graphics cards which require you to buy extra modules later, IV24 has everything you could want from a video board built-in!

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FREE SOFTWARE WITH IV24

Create stunning 3D rendered images, retouch captured images and wipe between 2 video sources with 50 packaged video transitions for production studio effects. Also included is MacroPaint 2, a powerful 24-bit graphics package which can paint in 16.8 million colours.

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A1500/A2000 ADAPTOR £49.95 - GVA 5224

IV24 inc VIU-S	IV24 inc VIU-CT
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Drawing by description

Professional computer-aided design on the cheap? Pat McDonald looks at XCAD 2000.

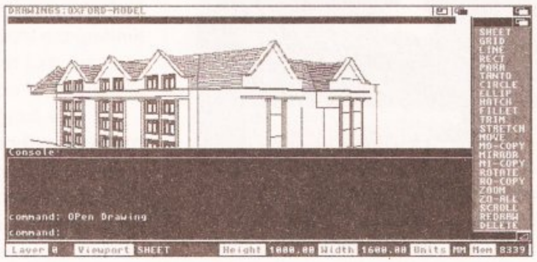
Together with a plotter or graphics printer, a CAD (Computer Aided Design) system can provide printouts of object designs with an accuracy far superior to that of a human hand. And *XCAD* makes it easy as well.

You need at least 1Mb of RAM to run *XCAD 2000*, though a hard disk is not required. It's dongle-protected, but the dongle is only needed for certain operations like saving a drawing to disk. Interlaced display versions are included if you have the display to make use of them, though they do run more slowly.

Run the program and you discover that it looks bloody hideous. However, you rapidly come to appreciate the fact that you asked for a professional CAD program and you got one. In its own way, it's excellent.

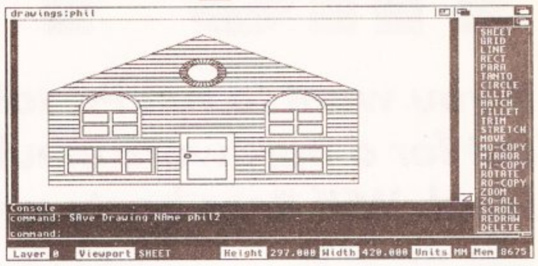
Although *XCAD* is an alphanumeric language that can be meticulously typed, practically every operation can be done with just the mouse. Input and output windows flash up and disappear, and if you just want a drawing area, you can turn the whole lot off. At first glance it looks totally word- and key-dominated, but in fact *XCAD* is more like having someone give a running commentary on what you're up to with the mouse. It doesn't take long to stop worrying about the words and concentrate on your drawing.

Freehand artists, however, will probably still not be happy. The program is quite happy with working in miles and millionths of an inch. Or kilometres and centimetres. But *XCAD 2000* uses a maximum of 16 colours – sorry, AGA owners. The picture elements are not square-edged rectangles but lines of variable thickness. Obviously scaling up and down is necessary, and with a CAD program you are absolutely dependant upon working on a grid.



Although it may look 3D, this is a 2D perspective view of a 2D model, with hidden lines nicely removed.

Those with an engineering or mechanical background will find *XCAD* much more approachable. CAD is not about producing stunning graphics – it is about modelling objects to a degree of precision where they could be manufactured, given the technology.



The first tutorial, by long tradition a simple house picture. Takes about half an hour to work through.

So why is it better than using a draughting board? Well, apart from the accuracy factor, there's also repetition. A human draughtsman has to draw every single nut, bolt, window frame and door knob unless they have made a stencil that they can trace. Copying bits of a drawing about on a computer is faster, and elements can also be stored on disk for later use. DM call these reusable bits of artwork "Symbols", and they have a few sets of standard items available – architectural and electronic schematic. As more people buy and use *XCAD*, I guess we'll see more. But the good news is, you can also import drawings and objects from *AutoCAD* on the PC (DXF format) via the PC-Amiga transfer utility *CrossDOS*. Sort of. It's not brilliantly implemented. Other output formats include *Aegis Draw* and Postscript. In addition, *XCAD* works with all Preference-supported graphics printers and HPGL, CPGL and RDGL plotters, if you are lucky enough to have access to one.

Once you have a view of a design, you can load it into the 3D perspective modeller. It's nowhere near a true 3D rendering system, but it does let you get wireframe images (minus hidden lines) of a 3D model. You can output 3D models to *Sculpt 3D* and *4D*. Those who wish to do a lot of work in 3D would be better off with *XCAD 3000* – see the box.

This is an individual program that is ugly and not shy about it. If you persevere, you recognise *XCAD's* brute, solid strength. Once you have mastered the keyboard shortcuts, you can express the shapes in your head as fast as you could on paper and with extreme accuracy. Highly recommended. **AS**

SHOPPING LIST

XCAD 2000 .... £79.99
(Christmas promotional price)
From: Digital Multimedia Services
☎ 0702 206165

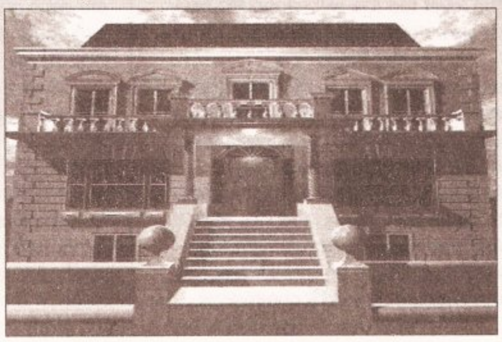
XCAD 3000

But what if you want a real CAD program? One that reads DXF files much more completely than *XCAD 2000* (though still not fully)? Go for *XCAD 3000!* But be warned, we're talking 700 pages plus of manual. And it does cost £249.99. And it needs 2Mb of free memory.

XCAD 3000 is much more 3D orientated and can output 3D objects in *Turbo Silver* format – very handy for getting accurate models into a 3D rendering package. Shame it's not AGA-compatible, but 256 colours would slow it down. The redraw on *XCAD 2000* is fast, but it's not on *3000*.

Why is a CAD package better for designing 3D models for rendering software like *Imagine* and *Sculpt?* Quite simply, scale. 3D programs usually do not use real units. So getting your nuts and bolts to the right scale on an oil platform is largely guesswork. *XCAD* can provide the 3D artist with a set of correctly-scaled models.

If *XCAD 2000* seems deep, *XCAD 3000* is an abyss. But personally I'll take a season in the abyss anytime. *XCAD 3000* and *Imagine* is a potent combination.



In case you haven't seen what a combination of XCAD 3000 and Imagine can do, here's a clue...

CHECKOUT XCAD 3000

Features
●●●●●●●●●○
A comprehensive set of 3D modelling commands. Not quite as punchy as *XCAD 2000*.

Documentation
●●●●●●●●●○
Heaps, but only a couple of examples.

Ease of Use
●●●●●○○○○○
Takes even longer to get comfortable with than *XCAD 2000*.

Value for Money
●●●●●●●●○○
A snip compared to similar programs on other computers.

Overall rating
●●●●●●●●●○
Quite awesome on a powerful Amiga.

CHECKOUT XCAD 2000

Features
●●●●●●●●○○
Reasonable, considering the absence of decent CAD packages on the Amiga.

Documentation
●●●●●●●○○○
All there, in 450 pages. It starts simple, then throws you in the deep end.

Ease of Use
●●●●●●●●○○
Maybe I'm being generous. You'll either love it or hate it.

Performance
●●●●●●●●●○
Zooms and redraws like lightning.

Value for Money
●●●●●●●●●●
At this price, it's very good value for money.

Overall rating
●●●●●●●●●○
Sacrifices some power in exchange for being user-friendly by CAD standards.

The PC chore...

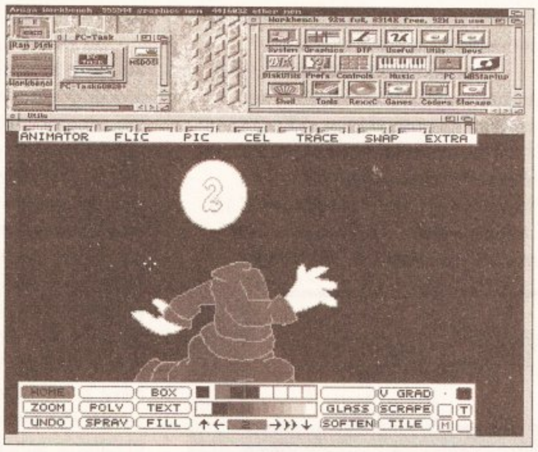
If you want to run PC software on your Amiga but don't want to fork out for a hardware emulator, then a software alternative may be ideal. Wilf Rees boots up PC Task and runs a PC and Amiga at once...

Sad but true: the commercial world is dominated by the PC, and there may be times when you want to bring work home with you but not lug a PC home as well. Or perhaps you need to to run PC software to do something that there isn't an Amiga equivalent for. There are hardware PC emulators you can add on to your Amiga, but these can be pretty pricey and their speed depends on the chip fitted in the emulator. Software emulators are a much cheaper option, and they take advantage of any accelerators fitted in your Amiga – so the faster your Amiga, the faster your on-board "PC", though software emulators in practice are still slower than real PCs in almost every respect.

PC-Task, distributed by Meridian, is a software emulator with the added advantage that your Amiga can both pretend to be a PC and simultaneously remain an Amiga – it multitasks perfectly, operating simply as another application screen. It needs at least 1Mb of RAM to run, but it supports two floppy drives as well as two hard disks, so the environment is pretty versatile. You can create files on any of your hard disks which act as pseudo drives, or use partitions in the normal way.

However, *PC-Task* does not come supplied with MS-DOS, so you'll have to buy this separately – version 5.0 or 3.3 is recommended.

Open up the disk window and you are presented with a collection of assorted icons. Three of these are self-explanatory, offering bootable options for the 68000, 68010, or 68020 and up – you choose the option corresponding to the chip in your own Amiga. An additional icon named **TDPatch1213** is provided for people running Workbench 1.2 or 1.3. This routine fixes bugs and adds some features to the **trackdisk.device** to allow reading from floppy disks and writing to them when the emulator is running.

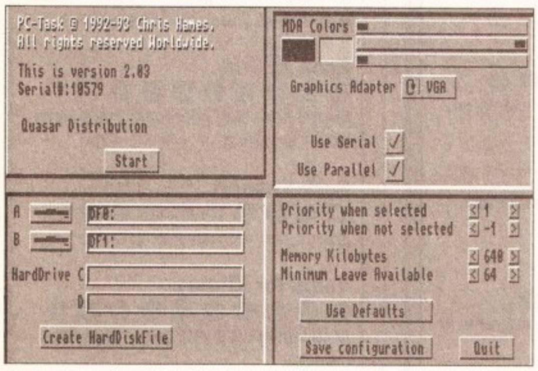


The feature that makes PC-Task really useful – no problem with multitasking whatsoever. This is the PC program Autodesk Animator running under emulation with the Workbench screen behind. "Running" may not be the right word though: it is really really slow!

Once the appropriate icon is activated, an option screen appears, on which you select system configurations. You can then create a configuration file storing your own settings and automatically loading to these preferences.

Assignment gadgets enable you to define your floppy drives as PC devices **A:** and **B:**. These by default are **df0:** and **df1:**, but they can be re-assigned to any additional external devices if desired. Your assigned drives automatically configure as MS-DOS 720K, or 1.44Mb if you have one of the new-generation Amiga drives in the A4000 series. You can also define the Amiga's parallel and serial ports as **LPT1** and **COM1** respectively – the PC device names.

PC-Task will emulate four different PC display standards. MGA is monochrome text only, which gives pretty fast text updates. There are only two colours available, and these can be selected by slider control. CGA is the default setting, and the most widely compatible. EGA allows both MGA and CGA modes, and also additional higher graphic modes, to run. The only cost is speed. VGA will do all the other modes. If you have an A1200 or A4000 with the AGA chipset, naturally you have access to additional graphics modes. VGA has better palette definition, with the ability to pick 256 colours from 256,000, but sadly Amigas with the older ECS chipset will only have the option of four.



You can set a range of configurations from here: floppy disk and hard disk assigns, user port allocations, graphics display, memory allocations and processor options. Lots more preferences are available, but these need to be entered directly via the Shell.

To get optimum performance when you wish to multitask, two options are provided to control processor allocation. "Priority when Selected" gives priority to the emulator when it is active and "Priority when not Selected" gives it priority when running as a background task.

The final option on the startup screen is one for memory allocation. This enables you to assign determined amounts of memory to the emulator, up to 704K. Setting the level too low will cause *PC-Task* to slow down, then fall over.

If you need help, the documentation is particularly good and very comprehensive. There is a very logical sequence of explanations for all of the functions of the software, a glossary and fault-finder to guide the novice, and lots of DOS routines to help with configuration and installation, as well as a list of the principal MS-DOS commands.

Advanced users can choose the option of adding additional commands not available on the startup screen. These need to be accessed via the Shell, and allow several options.

The simplest command enables you to bypass the options screen once all preferences are assigned. A further command offers sympathy to those with old ECS chipset machines with Chip (graphics) memory only: it limits the maximum screen depth which *PC-Task* will open. Unfortunately this is a trade-off: limiting the depth will speed up the program, but the price is a reduction in number of colours available.

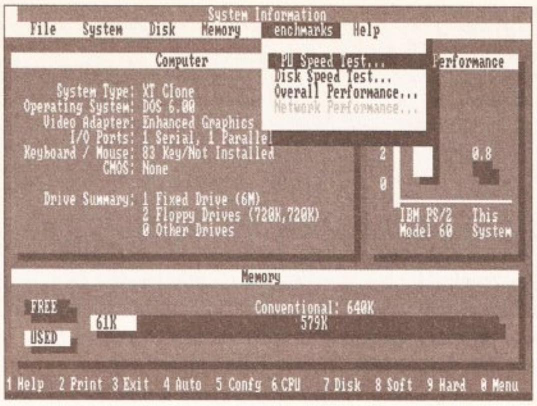
If your Amiga has internal hardware offering additional serial or parallel ports, you can assign the default operations to secondary ports rather than occupying the main outlets. Default fonts can be assigned, as well as instructions to direct *PC-Task* to get PC memory from Fast RAM. This is only of use, of course, if you have more Chip memory than Fast RAM.

Anyone with a A2000 still fitted with a 5.25-inch disk drive might want to assign this as a drive, and I found it worked okay. Alternatively, if you have an external 5.25-inch drive which is switchable between 40 and 80 track, this will work too, but only if you add a command to your **Devs:mountlist** file. A final provision allows for CD-ROM support, or so the manual claimed, but try as might, there was no way I could persuade mine to read PC CD-ROMs. I suppose, in all fairness, the manual did say it was a pretty basic driver, but for me too basic.

DIRECT INJECTIONS

Two further useful options are the ability to prevent the mouse pointer from turning off, and a routine which prevents checks for valid boot codes, just booting directly from any MS-DOS floppy.

An invaluable addition to the program is a mouse driver. You turn this on just before loading a PC program by pressing <left Amiga>-P, and the effect is that the original Amiga mouse pointer replaces the rather boring block cursor synonymous with PCs. An even better solution than this however is to use the utility *PCTMouse*, supplied with *PC-Task*. This should be installed in the **AUTOEXEC.BAT** file on the virtual disk you create. An **AUTOEXEC.BAT**



Curious to see the real performance of PC-Task? Central Point's PC Tools system info compares the performance of PC-Task against an IBM PS/2 model 60 – a basic 286 machine, not particularly renowned for its speed. The PC-Task performance was .8 compared to 4.6 for the PS/2 – six times slower. No points to score, but my 486DX2-66 comes in at 87.9.

file is the PC equivalent of your Amiga startup-sequence.

ACTION SPEAKS LOUDER THAN WORDS

Once you're past all the set-up procedure, the crucial question is how good is it? The answer is more complicated than a simple good or bad. *PC-Task* is a pretty remarkable bit of software, but you can't expect miracles from emulation software. In the first place, it is a difficult job cajoling the Motorola 68000 family of processors used in Amigas to perform tasks designed for completely different processors – the Intel 8088 or 8086 in early PCs, the NEC V20 or V30 in later machines, or the more recent 386, 486, and the newest generation of Pentium processors. Any program that makes a lot of hardware calls is going to be hard to fool, and even in the best case there is an unavoidable speed penalty.

It really boils down to what application you want to use. If you want to use your PC word-processor from work, *PC-Task* should give acceptable performance that will enable you to work at home. If you think you are going to run Windows and exotic PC applications, forget it. The lack of speed is just too unbearable. This new version of *PC-Task* is an improvement on earlier releases and is slightly faster, but nothing like enough to run graphic-based programs. I got *Autodesk Animator* to run, but the screen refresh was so slow as to make the program unusable. Similarly, if you want to run PC games, you'll find that often these are written in non-standard modes, and *PC-Task* struggles to support them.

That said, however, this is by miles the best software PC emulator available for the Amiga. If you are patient and laid-back, you will both get along fine. If you want to utilise the facilities offered by top-end PC programs, then sorry, folks, but a hardware solution is the only answer. Even the modest price of *PC-Task* could help you on the way to buying a second-hand Commodore A2286 card, an altogether faster and more efficient beast, or maybe a Golden Gate 386 or even 486 card, but then you would need a A2000 or higher to fit them. Other hardware emulators are available such as the AT-Once or the KCS, suitable for A500s or A600s. The choice is yours. **AS**

SHOPPING LIST

PC-Task **£49.95**
From: Meridian Software Distribution, East House, East Road Industrial Estate, East Road, London SW19 1AR.
☎ 081 543 3500

CHECKOUT Pc-Task

Features
●●●●●●●●○○
One of the program's strengths: it multitasks, and offers loads of configuration options.

Documentation
●●●●●●●●●○
Excellent, with loads of useful tips on MS-DOS.

Ease of Use
●●●●●●●○○○
Dead easy to use – after all, PCs are designed for morons – but so slow!

Value for Money
●●●●●●●●●○
Got to be one of its best points.

Overall rating
●●●●●●●●○○
The best of the software solutions to PC emulation.

AccuTrans 3D

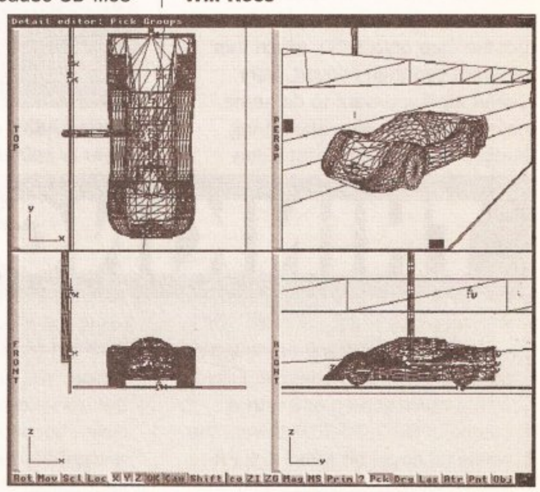
Perhaps the most exciting branch of computer graphics is ray-tracing – to render a "3D" picture, your Amiga treats objects as geometrical solids with defined surface textures, lit by specified light-sources, and then calculates how the light rays from those sources would define those objects. You can get stunning results, complete with lifelike shadows and reflections. Whichever 3D modeller or ray-tracer you choose, rendering an image is very time-consuming, but that is not the main problem. Various programs differ in their support for the range of Amiga hardware options – display boards such as DCTV, Harlequin, Firecracker, and so on, for example – so you may find that for different stages of the process you'd prefer to use different packages. It may be that rendering your 3D model could be better done on one program and the initial modelling on another. Or you might like to adapt an object created with one package and use it in another. The catch is that the programs available use different file formats. Enter *AccuTrans 3D*.

AccuTrans 3D enables translations between various 3D modeller/ray-tracer programs' file formats. These include *Imagine, Lightwave 3D, VideoScape, Modeller 3D* and *Sculpt 3D/4D*, with *Aladdin 4D* and *Caligari 24* soon to be supported. *AccuTrans* also supports DXF (Drawing eXchange Format) files, which are considered a standard format for vector-based drawings.

DXF support will enable you to import your files into various programs, such as *XCAD 3000, AutoDesk 3D Studio*, and *AutoCAD*. DXF support is very useful, because if you are lucky enough to have access to a PC running *AutoDesk 3D Studio*, then you will appreciate the vastly improved rendering times, even on a basic 386 equipped with maths co-processor. *AccuTrans 3D* will work on any Amiga with Workbench 2.04 or higher and 2Mb or more of memory. Although an accelerator is recommended, it is not necessary. A hard disk is useful, because 3D files consume heaps of disk space.

As well as converting between various 3D file formats, *AccuTrans 3D* also enables you to modify various aspects of the 3D models being translated, such as the index of refraction for various transparent materials, or the colours of individual objects. The settings for conversions can be altered to your preference – so, for example, you could convert a wooden object into a glass object. A useful list of transparent materials and their equivalent refractive indices is included. With this, you can specify that an object is made out of diamond or ruby.

All of the conversion tests between the supported programs seemed to work, with a high degree of reliability. The only problem I encountered was the omission of some faces while converting *Imagine* files to DXF files. Apart from this minor problem, all seemed fine. A very handy utility indeed.
Wilf Rees



This model was saved as a DXF file from AutoDesk 3D Studio, converted to an Imagine file using AccuTrans 3D, then loaded into Imagine's Detail editor.

CHECKOUT AccuTrans 3D

Features
●●●●●●●●○○
The software allows extensive control over the output of the final model file.

Documentation
●●●●●●○○○○
The manual covers all the necessary information, but is a little difficult to read. The **Amigaguide.library** helps a great deal for interactive tuition.

Ease of Use
●●●●●●●○○○
Apart from the large array of buttons, overall the process is fairly simple.

Value for Money
●●●●●●●●○○
Worth buying if you're into rendering.

Overall rating
●●●●●●●●○○
Until 3D rendering programs can agree on a standard, this will be invaluable.

SHOPPING LIST

AccuTrans 3D **£39.29**
From MicroMouse Productions (US)
☎ 0101 306 522 6077

Scan the silver disks

Want to add a CD-ROM to your Amiga? Pat McDonald looks at the ASIM Compact Disc Filing System.

It's five AM, I've just spent the entire night looking through literally gigabytes of data on CD-ROMs and CDTV titles, and it could hardly have been simpler.

The *ASIM Compact Disc Filing System (CDFS)* is a rather neat collection of drivers and utilities to enable you to hook up a SCSI CD-ROM drive to your Amiga, provided it's equipped with Workbench 2.x and a SCSI hard drive interface. Also, CDTV and CD32 owners can use one of the utilities, *AsimPhoto*, to read Kodak-CD picture files and turn them into 24-bit IFF picture files. Wow!

However, you need a few megabytes of RAM to produce a PAL interlaced 24-bit image (768 x 512). Plus, the resulting image probably won't fit on a standard floppy disk. Don't get me wrong. I think this is the most useful feature. It means that anyone who needs some prints or negatives turned into excellent quality Amiga graphics can do it without spending a fortune on a scanner – your local Kodak film processor can scan the pictures and put the files onto a CD, which this program can then convert. Very useful for if you want to do some high quality DTP on a shoestring budget, although for most video purposes it's too small scale.

Other people may consider *ASIM CDFS's* ability to read CD-ROMs much more useful. Not only can it read the standard ISO 9660 CD-ROM standard used by Amigas and IBM PCs, it can also read Apple's High Sierra format. So if you have the relevant machine or an emulator, then you could (in theory) use foreign CD-ROMs. In practice, you would probably have to spool the data off to a hard drive and access the information from there. Even then full compatibility isn't guaranteed. All *ASIM CDFS* claims to do is give you access to the data on CD-ROMs. It makes no claims about your ability to do anything with the information.



It's a real shame that AsimTunes, the music CD management utility, can't read track, album and artist's names off a CD. At least any of the ones I tried.

AsimTunes is a bundled utility to make using your music CD collection as painless as possible. Which isn't much. Basically, you have to sit down with your collection and feed it one at a time through your *CDFS*-equipped Amiga. The computer reads the number of tracks and the length of each song, and you then have to type in the name of the album, the group and each track's name. You can alter the playing order or skip tracks that you don't like.

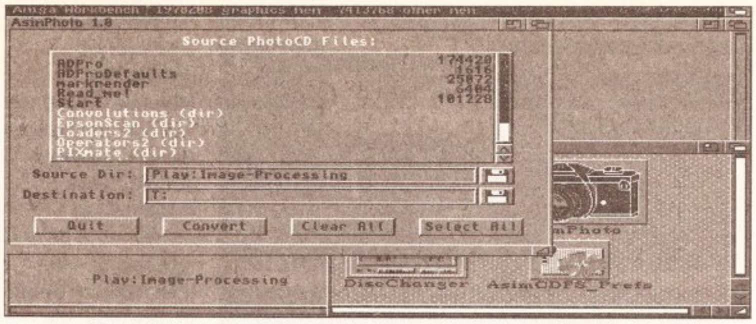
Once you have saved the resulting database file, the software will recognize the CD next time it's put in the drive. Click on **Play** and off it goes. I had the impression that all the relevant information was read automatically off the CD. But no, you have to type it in.

I was hoping that this product would let me convert the digital information from a music CD into an Amiga sound sample, but again I was disappointed. Pity. Such a capability would have knocked spots off a conventional sound sampler.

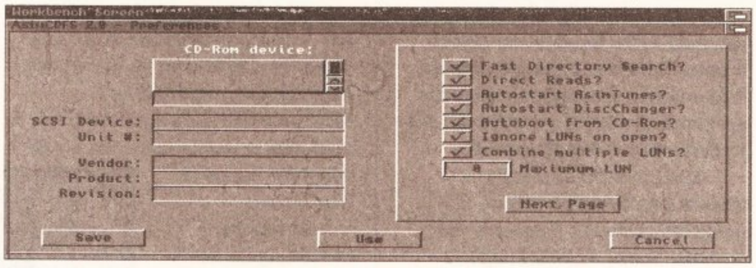
One good thing is that all of the functions of *ASIM CDFS* can be linked to an ARexx port. I've got no complaints at all about this part of the manual, although a few examples would have been nice for novices.

You do get one free CD – surprise surprise, the Fred Fish collection on CD-ROM. If you have never encountered it before, then you can spend many happy hours transferring the programs to floppy and watching them crash, because a lot of them are horribly out of date compared to the sort of Amiga you need to use *ASIM CDFS.*

In fact, that's the main problem with CDs. All the information you can currently get on them is available on floppy or printed in a book. If you could get titles like "How to hit AGA and AAA Amiga hardware", something that you couldn't get in a book, I might be tempted. As it is, I can't really get excited about a medium that you can't record on and that has a transfer rate slower than a motorway-mashed hedgehog. AS



The wonderful AsimPhoto program, designed to read Kodak-CD picture files and turn them into 24-bit IFF picture files. Shame I didn't have any...



Getting ASIM CDFS going is largely a matter of telling it what your SCSI driver is called and which SCSI unit the CD drive is operating on.

THINKING LATERALLY

One inventive application for *CDFS* would be to use it and an Amiga as the heart of a DJ's console. Fitted with a touch-screen and with a couple of SCSI CD-ROM drives, the whole lot could be wired to a PA and cross-fader without much difficulty.

What's the advantage? Well, using *AsimTunes*, all you have to do is select the track, hit **Play** and **Pause.** You don't have to remember the track name or peer at the album cover, because *AsimTunes* recognizes and displays this information anyway (or at least it does after you have typed it in the first time).

Cost would be competitive compared to a dedicated DJ rig, and although it wouldn't play vinyl records, you could mix the Amiga's sound output as well and throw in your own jingles and scratches. Good idea, innit? Thanks to Daren Oliver for that and other help with these reviews.

SHOPPING LIST

ASIM CDFS software £49.99
From: MicroPACE
☎ 0753 551888

CHECKOUT ASIM CD FILING SYSTEM

Features
●●●●●●●●○○
Overall quite a good selection of tools.

Documentation
●●●●●●●○○○
Good, but a bit economical with the truth in parts.

Ease of Use
●●●●●●●○○○
Tricky to set up at first but plain sailing after that.

Performance
●●●●●●●○○○
Gives access but absolutely no guarantees.

Value for Money
●●●●●●○○○○
The software's reasonable, but SCSI CD-ROM drives ain't!

Overall rating
●●●●●●●○○○
If you need to hack CD-ROMs, this does the job quite well.

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Document Description Language included	-	-	-	-	YES
Flash ROM	-	-	-	-	YES
Flash ROM Upgradeable Firmware	-	-	-	-	YES
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Resident Bit-Mapped Fonts	10	14	2	14	14
AGFA Intellifont Scaleable Font Technology	-	YES	-	YES	YES
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EPSON FX Emulation Included	-	YES	YES	YES	YES
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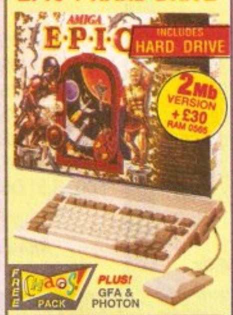
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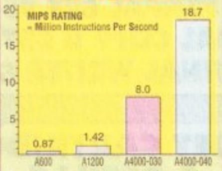
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Edinburgh Amiga Club Advice, talks, PD exchange, monthly meetings. Contact Stephen Fradley, 114 Duke Street, Edinburgh EH6 8HR, ☎ 031 555 1142. (AS38)

Edinburgh Amiga Group Membership £5, inc free advice and PD. SAE to Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE. (AS37)

Lothian Amiga Users Group Amiga contacts, group buying of disks, demo evenings, shareware swaps, advice Meet Room 71, Inveralmond Community High School, Ladywell, Livingston, 6.30-9.30pm third Monday every month. Contact Andrew Mackie, 52 Birniehill Ave, Bathgate, W Lothian EH48 2RR. £1 a meeting. (AS38)

Perth and District Amateur Computer Society General advice, talks, Amiga PD. Meetings third Tuesday in every month, 8pm. Membership £6 or free for under 16s. Contact Alastair MacPherson 137 Glasgow Rd, Perth. (AS37)

Redburn Computer Users Group Help, ideas, PC, graphics and business. Meets every second Wednesday 6.30pm to 9.30pm. Contact Ruby Anderson ☎ 0294 313624. (AS37)

Tay-Soft PD Club Non-profit-making postal PD, advice, disk newsletter, helpline 6–10.30pm. Contact Dave Thornton, 46 Balmerino Road, Dundee DD4 8RR ☎ 0382 505437. Membership £2.50 (free Utils disk on joining). (AS37)

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Amiga Maniacs Help Graphics, sound, WB, programming, help. Beginners welcome. Free membership (by post). Contact Johnny, 8 Tan-y-Grais, Caernarfon Rd, Bangor LL57 4SD. (AS35)

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South Wales Club Newsletter, PD library, free newsletter, programs, help and advice. For more info contact D Allen 53 West Avenue, Trecenydd, Caerphilly CF8 2SF. (AS35)

Wrexham District Computer Club PD, library, equipment loan. 10p to join, 50p to get in. Meetings at the Memorial Hall, Wrexham every Thursday, 7–10pm. Contact Paul Evans, 3 Ffordd Elfed, Rhosnesi, Wrexham, Clwyd LL12 7LU. (AS35)

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Amiga Video Producers' Group Disk magazine five times a year; meets quarterly in Swindon. Object library for mainstream Amiga 3D programs (Imagine, Sculpt, VideoScape, etc). For info SAE to J Strutton, 8 Rochford Cl, Grange Park, Swindon, Wilts SN5 6AB ☎ 0793 870667 before 9pm. Membership fee £10 a year. (AS35)

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CDTV Users Club Technical support, news, compiling compatible software list. Free membership – just send SAE. Contact Julian Lavanini, 113 Fouracres Rd, Newall Green, Manchester M23 8ES. (AS35)

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MUG – MED Users Group Club for users of OctaMED. Disk magazine, advice, news, competitions. Contact Richard Bannister, 6 Glevum Road, Stratton St Margaret, Swindon, Wilts SN3 4AF. Membership free, send SAE for details. (AS35)

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Solent ☎ Anthony Dimmer 0705 254969
South East ☎ John Bickerstaff 081 651 5436. Open nights, newsletter, discounts.
South Wales ☎ Mike Bailey 0446 775287
South West ☎ Peter Miles 0297 60339
Stevenage ☎ Brian Grainger 0438 727925
Stoke-on-Trent ☎ David Rose 0782 815589 (eve)
Watford ☎ Bob Rigby 0923 264510
West Riding ☎ Kevin Morton 0532 537318
Wigan ☎ Brian Caswell 0942 213402
1520 Plotter Group ☎ John Bentley 06286 65932.

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If you run a user group which isn't listed on this page, fill in the form below for your free entry. Send it to *Amiga Shopper* User Groups List, 30 Monmouth Street, Bath BA1 2BW. We reserve the right to refuse entries.

AS33

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Copy right

Wilf Rees tests X-Copy & Tools, a suite of powerful data back-up and disk management utilities.

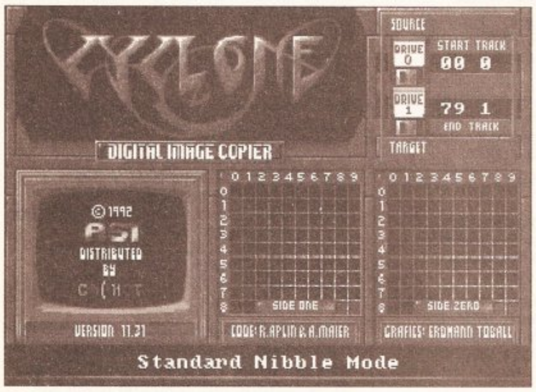
Owners of *X-Copy II*, that most popular of back-up programs, will welcome this updated and extended version, which boasts new features such as hard disk back-up and file management facilities, as well as a complete re-write of all your favourite cloners.

There are six separate utilities on the disk, two dedicated to copying disks. The first, *X-Copy Professional,* does not require the supplied dongle for any of its functions. Four levels of copy are available:

- **DOScopy** is a straightforward fast copier for AmigaDOS disks.
- **DOScopy-Plus** is similar but attempts to correct any errors it finds on the source disk as you copy.
- **BAMcopy-Plus** is a very fast copier, with the capacity to ignore any tracks on the source disk which are empty. It also attempts error correction onto the cloned disk.
- **Nibble** is the slowest, but by far the most accurate, backing up the majority of protected disks, and it even has the brilliant capacity to copy disks from other computers such as Archimedes or Atari ST.

Within each of these four copying modes, there are additional tools for disk or system management:

- **Optimise** reorganises disk data, enabling files to be loaded faster. Only operable with AmigaDOS disks, **Optimise** needs at least 1Mb of RAM. From experience I would advise using this only on back-up disks.
- **Format** and **QFormat** are both speedy formatting utilities, working in about 40 seconds. **QFormat** additionally removes the directory and name of the disk.
- **Erase** will de-format a disk, rendering it suitable for copying onto. While the use of new, unformatted disks is always recommended, **Erase** should not give you any problems.
- **Install** will write a bootblock onto a disk, and there are five options within it: you can make the disk bootable or not, FFS bootable or not, and run a virus-detection routine as well as install a boot-block.
- **Speedchk** looks at the speed of a disk drive. This is useful for comparing the comparative speeds of the source and destination drives when you want to do some copying – the nearer together these are, the better, and ideally 300 rpm.
- **DrivesOn** is a routine to make your Amiga think it has four disk drives.
- **KillSys** is a memory optimiser, useful mainly to those whose Amigas have only 512K of RAM.
- **Directory** will display the current directory of the disk, and **Checkdisk**, one of the most useful features, will analyse the disk for errors of various kinds, displaying a red error number which you can look up in the manual.
- Finally, **Default** resets all of the options to their default settings.



X-Copy includes four back-up programs. Cyclone is the heavy-duty copier with the most sophisticated, but unfortunately slowest, means of duplicating your data.

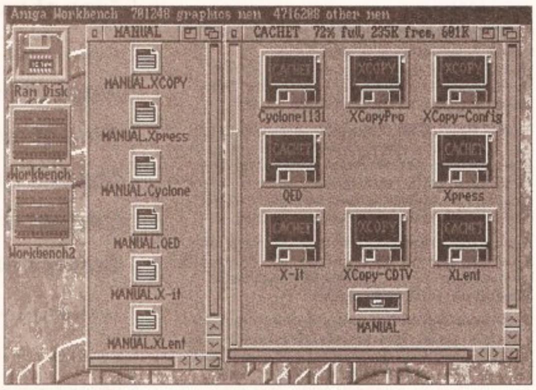
Any of the above options can be selected using the illuminating gadgets on the control panel. When copying, you can select start and end tracks, and it is possible to integrate different copying modes into one single copy. Using the program is simplicity itself, but one word of caution: *always* write-protect your source disk. It is all too easy to wipe a disk, either by inserting the disks into the wrong drive or by not setting the source and destination drive indicators correctly.

BIG GUNS

Cyclone is the second copier in this suite of programs, and it is intended for those disks which *X-Copy* cannot handle. Unlike its junior brother, *Cyclone* requires the dongle supplied with the package. This is very well made compared to the previous version, which was simply a couple of connectors joined by a few soldered pins. Five modes of copying are offered – three are standard modes, and two are high performance modes named "AWPM" (Adaptive Pulse Width Modulation) modes, which use the drive's pulse to lock the speed of sender and receiver together, the ideal conditions for duplicating. These are slow copiers, but the standard of achievement is excellent. *Cyclone* also hosts a **Speedcheck** and a **Wipedisk** facility. I have not found anything that *Cyclone* will not copy – it even backed up the sample disks for my Roland S550 sampler, notorious beasts to duplicate. Both *X-Copy* and *Cyclone* are first-class pieces of software, and they should enable you to back-up any data.

Aside from these, the tools in this suite vary in quality and usefulness. *X-Lent* is a file-handling tool similar to *SID* but not as good. All of the usual facilities are there – copy, move, rename, delete, and so on – as well as 14 user-definable custom gadgets. I found *X-Lent* worked okay but I really wasn't happy with the graphic interface, probably because I am so accustomed to using *Directory Opus.*

X-Press is a hard-disk back-up utility similar to all the usual programs of that ilk (and not to be confused with *Quark XPress,* the professional DTP package on the Mac and PC). The expected commands are all there, as well as the ability to archive, flag and filter files. I must confess that I avoided backing up my entire hard disk – frankly I am not that trusting – but the cluster of directories I did back up successfully restored to an empty section of my drive. *X-Press* uses a "Tree Disk" at the completion of a back-up, to display all of the structure on the disk. This is the most important part of the back-up, because all commands to restore selected or filtered files are done from the key disk.



The impressive range of programs in the X-Copy & Tools suite, as shown when the window is opened. The manual directory describes its contents.

QED is a text editor, and really one of the stars of this suite. The rather stark appearance on loading belies its very powerful and friendly nature. All commands are called by key commands, using either <Ctrl> plus a key or <Alt> plus Function keys. Text manipulation approaches word processing standard.

QED also comes in handy to read the manual. Some people loathe disk-based manuals, others love them. I am of the latter persuasion. Producing glossy printed manuals is expensive and time-consuming – this way keeps the price down. The manuals for *X-Copy & Tools* are excellent – every conceivable aspect of each program is covered, and since you can select to print out only those aspects of the manual you want, you don't end up with useless reams of paper littering the room.

Considering the power and usefulness of this package, it is a must for anyone who needs to back up important data, and it offers a good range of data management utilities into the bargain. AS

SHOPPING LIST

X-Copy Professional & Tools £39.99

From: Siren Software, Wilton House, Bury Road, Radcliffe, Manchester M26 9UR.
☎ 061 724 7572

CHECKOUT
X-CopyPro & Tools

Features
●●●●●●●●●●
An amazing collection of programs to handle a multitude of back-up and management tasks.

Documentation
●●●●●●●●●○
Very comprehensive, though some people may not like the fact that it is disk-based, with only a few notes.

Ease of Use
●●●●●●●●●○
A doddle really.

Value for Money
●●●●●●●●●●
Incredibly cheap for guarding all of your precious data against accidental damage.

Overall rating
●●●●●●●●●○
A must.

X-Stitch Designer

From IL-Soft comes version 3 of their embroidery/sample designer, incorporating many of the characteristics usually found in art packages, with new added features.

The worksheet environment is essentially a piece of graph paper, with a collection of assorted icons underneath enabling the user to manipulate many possible features.

CHECKOUT X-STITCH DESIGNER

Features
●●●●●●●●●○
All you need for the task, even an invaluable IFF conversion facility.

Ease of use
●●●●●●●●●○
A doddle for any age from 6 upwards.

Documentation
●●●●●●●●●○
Simple but clearly written.

Value for Money
●●●●●●●●○○
Not too pricey, but caters for only a limited market.

Overall rating
●●●●●●●●●○
Does exactly what it says and does it pretty well.

The worksheet is larger than the Amiga screen, so a white square with an inset gadget gives an indication of which area of the design you are currently working in. You use the mouse for virtually all input of design, and you control the editing and disk activity from the keyboard. A colour choice panel displays 16 different selectable stitch colours, all of which can be adjusted using the familiar style of RGB slider bar to match particular yarns or cottons. You can also select stitch type using an icon-driven menu offering the most frequently-used stitches.

The package is really easy to use. The manual is only nine pages long, but explains in very easy to understand English how to use the software. Loading any of the five samples from disk (you just hit "L" for Load) and exploring ways of changing them is probably the easiest way to become familiar with the package. You can choose, for example, a back-stitch type as any form of vertical, diagonal, horizontal or cross-stitch pattern, though this is only available in one colour.

Once you have created a basic pattern, you can exploit the powerful editing facilities. First it is possible to cut sections from other patterns and incorporate them into a current design: you call up the desired source file, draw a mouse-controlled box around the section to be captured, then use a simple find and paste procedure to place the section into your existing design. You can also rearrange a design using "Block" functions to manipulate existing elements. The options available are Fill, Delete, Move, Copy, Turn, Mirror and Enlarge, each executed simply by hitting its first letter.

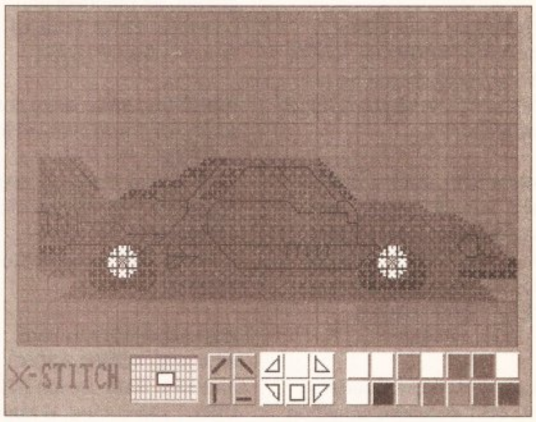
There is even the facility to import IFF files and convert them to *X-Stitch* format. Any 16-colour image can be imported, giving you a tremendous opportunity to take advantage of all manner of external devices such as digitisers and scanners, making it easy to generate exciting pictures without the need for any great drawing ability.

This is a very well designed and exceptionally easy to use package which deserves a place in any school or home where textile work has a high priority.

Wilf Rees

SHOPPING LIST

X-Stitch Designer £34.99
From: IL-Soft, Buttercross House, 16 Langdale Gate, Witney, Oxfordshire OX8 6EY
☎ 0993 779274



An example of a Ferrari (that's what it says!), in the samples directory. Not the best of the offerings, but a really friendly interface and very easy-to-use control system make X-Stitch Designer a smart package.

Turbotech A41200 memory expansion

Although the A1200 is without doubt the best value full 32-bit-architecture computer on the market, its expandability is severely hampered by the fact that it has only one 150-pin 32-bit slot. This means you have to choose your upgrades carefully. But you'll rapidly outgrow the A1200's standard 2Mb of Chip RAM, so a memory expansion like this is a good option.

CHECKOUT TURBOTECH A41200

Features
●●●●●●●●○○
Battery-backed-up clock, 32-bit, 70 nanosecond ZIPs – impressive.

Fitting
●●●●●●●●●○
No problems – a tight squeeze, but easy to manage.

Documentation
●●●●●●●○○○
Minimal but adequate.

Value for Money
●●●●●●○○○○
Compares very favourably with 16-bit 4Mb expansions.

Overall rating
●●●●●●●●○○
Cheap, cheerful, and may just fill your requirements.

The Turbotech A41200 board boasts 4Mb of 32-bit "zero wait state" RAM and a real-time battery-backed-up clock. It is well-made, but worryingly, on the underside of the board, there is a kludge in the shape of a small string of copper wire. While this shouldn't be a problem once the board has been fitted, fitting is a bit of a squeeze and the slightest bit of mishandling during installation could break it.

As for the claims by Siren that the A41200 can more than double the speed of code execution over a standard Amiga, we've got to remain sceptical. You certainly wouldn't get that with a typical application. However, there is no doubting that loosing the CPU from the shackles of the co-processors will result in an overall speed increase. We checked exactly how much, using *Amiga Intuition-Based Benchmarks* v5.0.

Assuming a figure of 1 in each of the following categories for a standard A1200, these are the figures with the expansion.

- Integer: 1.19
- Graphics: 1.16
- Floating Point: 1.33

As can be seen from the results, the A41200 certainly increases the overall efficiency of program execution. However, it definitely does not double the speed. The average figure we derived from the above table somewhat coincidentally tallied with the the Installation Manual and User Guide's speed increase statement of 122%.

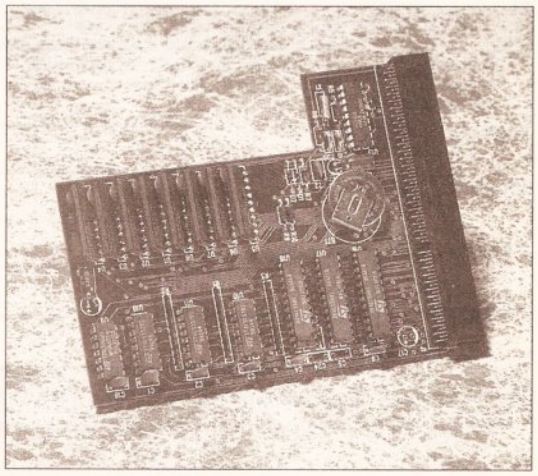
The A41200 is a commendable piece of hardware. When you consider the special introductory price of £169.99 (only £10 more than a typical 16-bit 4Mb memory expansion), it's a steal. Expanded A1200s leave you a relatively unconstrained hand to explore the sizzle the machine offers – multitasking, video applications, desktop publishing, ray-tracing, the lot.

The downside of the board is the fact that it is closed-ended. You can't add any more memory to it. Neither can you add an FPU, an accelerator or a SCSI interface. If all you need is 4Mb and a battery-backed clock, we have no qualms about recommending the unit. If not, you'll have to consider looking elsewhere.

Steve McGill

SHOPPING LIST

Turbotech A41200 memory expansion £169.99
From: Siren Software, Wilton House, Bury Road, Radcliffe, Manchester M26 9UR
☎ 061 724 7572



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GVP A530 120Mb hard drive with 40MHz 68030 and 8Mb RAM. Boxed £700 ONO. I J Sircombe, 6 Manor Place, Priors Park, Tewkesbury, Glos. GL20 5HL.

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KCS PC Power Board inc DOS 5.0 and manuals £120. ☎ 0442 642280

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Amiga 1200, MBX 68881, 14MHz FPU plus real time clock. No RAM but will take from 1Meg to 8Meg SIMMs. £80 ONO, fits in Trapdoor. ☎ 061 366 0247, 9am till 5pm.

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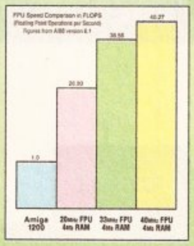
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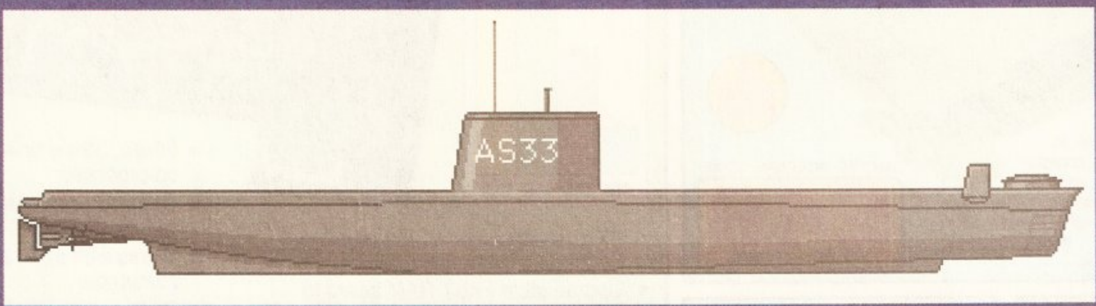
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AMOS Action

Jason Holborn extends our AMOS paint program with the addition of a selection of extra painting tools.

As you will know if you've been following *Amiga Shopper* over the last few months, we're hard at work on a paint program written completely in AMOS. *DPaint* it may not be, but already *ASPaint* is starting to show its true colours (ouch). Already we have added a toolbox strip, a colour selector and a couple of painting tools and this month we continue by adding a couple of extra painting tools – all done within AMOS.

This month also sees the release of a couple of new AMOS products. First up is *Craft*, a brand new extension that adds over 160 new commands to both AMOS and AMOS Professional. *Craft* offers ready-to-go fractal generation commands, a couple of very handy new selectors (including a very good colour selector), improved sound and music commands, powerful directory scaning commands and a whole lot more besides. *Craft* costs £24.95 and is available from Black Legend on 0727 868005. Watch for an in-depth review in *Amiga Shopper* soon!

Another monumental piece of news is that Future Publishing (the company that bring you *Amiga Shopper* every month) have just published a comprehensive book on AMOS games programming entitled *Ultimate AMOS*. The book, which just happens to be written by me, covers virtually every aspect of programming AMOS's "special" features such as screens, bobs, rainbow, scrolling, AMAL and so much more besides. Unlike other AMOS books, however, *Ultimate AMOS* shows you how to apply all this knowledge to games programming. Included with the book is a disk that includes all the source code from the book and four fully-commented AMOS games. What's more, all this can be yours for just £19.95! See the advert on page 124 for the full ordering details.

Anyway, that's enough of the blatant book pushing. Let's get stuck into this month's juicy segment of code. It's on pages 102-103, but to save you typing it all in, once again you'll find it all on the cover disk.

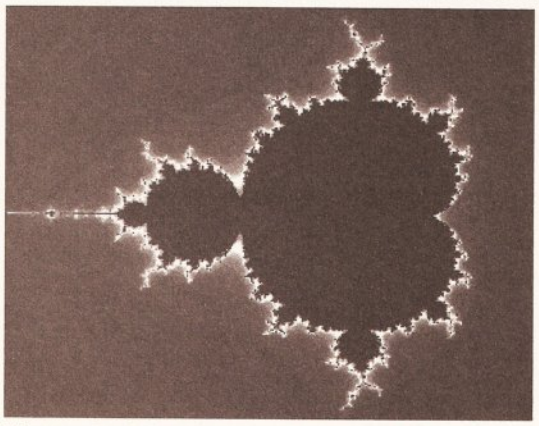
1/2. Before we can add the new procedures to *ASPaint*, we need to add a few extra lines to the **_PROCESSTOOLS** procedure so that the program recognises them when the user presses the appropriate gadgets. Note that the first two **If...Then** constructs have already been entered, so ignore these.

2. The first **If...Then** construct that we enter passes control to the **_LINEDRAW** function if the user clicks on tool gadget number 2 in the toolbox window. This is indicated by a value of **2** being held in the **SELECTED** variable.

3. If the **SELECTED** variable contains a value of **3**, the program jumps to a procedure called **_OUTLINEBOXDRAW** that, logically, handles the drawing of outline boxes.

4. If the **SELECTED** variable contains a value of **4**, the program jumps to a procedure called called **_FILLEDBOXDRAW** that, not surprisingly, handles the drawing of filled boxes.

5. If the **SELECTED** variable contains a value of **5**, the program jumps to a procedure called called **_OUTLINECIRCLEDRAW** that – you guessed it – handles the drawing of outline circles.



The new Craft AMOS extension provides 160 new commands, including support for fractal generation.

7. That's the **_PROCESSTOOLS** procedure finished for this month. Note that as we add new painting functions, this procedure must be updated accordingly, or *ASPaint* will not recognise our new painting tools.

8. The first of our new painting tools is the **line draw** function that handles the drawing of straight lines.

9. The procedure is called every time the program's main loop is performed, but the main core of the procedure is not executed unless the user is pressing the left mouse button and the mouse pointer is over the painting screen. If both of these conditions are true, then the user is marking the start of the line that they wish to draw.

10. As with all our previous painting tools, the first thing we must do is to update the "**Undo**" buffer so that if our users make a mistake, they can remove the line they have drawn.

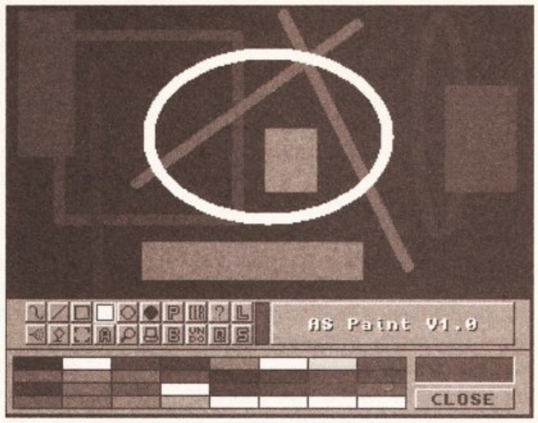
11. Our paint program enables the user to reposition the line using a technique called "rubber banding", which constantly redraws the line without corrupting the background screen until the user decides that they're happy with the position of the line. This is done using AMOS's "**Reverse**" drawing mode. (Amiga OS programmers will know this better as JAM mode 3.) We therefore start the procedure by changing the drawing mode using the "**Gr Writing**" command.

12. The next thing we do is to get the '**X**' and '**Y**' screen coordinates of the start of the line by reading the coordinates of the mouse pointer.

13. The procedure then enters a "**Repeat...Until**" loop that constantly reads the position of the end of the line and draws a preview of the line.

14. We already have the start of the line, so we now need to read a second set of coordinates that will be used as its end coordinates.

15. Using this second set of coordinates, the line is drawn on to the screen. Note that at this point, the line is not drawn in its correct colour – because we're drawing in JAM mode 3, the pixels that lie beneath the line are simply reversed. The program then waits for a vertical blank (so that the user can actually see the line) and then removes it by drawing a reversed line using exactly the same coordinates. Drawing a reversed line on top of the reversed line we have already drawn restores the display to its original state.



With all this month's code added to ASPaint, you should be able to draw lines, boxes and circles. And you don't even need to type all the code in yourself – you'll find it all on this issue's cover disk!

16. If the user lets go of the mouse pointer, the two sets of coordinates that we have are taken to be correct, so the procedure moves on to actually draw the line into the display. In order for the line to be drawn correctly, the drawing mode is changed to JAM0.

17. Just like *DPaint*, our paint program enables the user to use a variety of different brush sizes and styles. The first thing that the procedure therefore does before drawing the line into the display is to check the type of brush being used.

18. If the user is using a simple one-pixel brush (the default setting), the line is drawn directly into the display using the AMOS **Draw** function.

19. If, on the other hand, the **BRUSHSIZE** variable contains a value greater than zero, a procedure called **_DRAWBRUSHLINE** is called. This new procedure draws a line using the currently-selected brush. We'll cover this procedure later.

20. Well, that's the **line draw** function complete. Now we move on to the **_OUTLINEBOXDRAW** procedure.

21. Once again, the first thing we do is update the "**Undo**" buffer so that the result of this drawing function can be removed if the user wishes.

22. Once again, *ASPaint's* outline box tool uses AMOS's "JAM3" drawing mode to allow you to expand and shrink the size of the box in real time until you get the exact size that you want. The procedure therefore switches to JAM3 mode using the "**Gr Writing**" command.

23. Before we can start drawing the

box on to the screen, the current position of the mouse pointer is read and converted to screen coordinates. These coordinates will be used as the "origin" point of the box and the box will be anchored at this point.

24. With the origin of the box now fixed, the first set of coordinates is read into the variables '**X1**' and '**Y1**'.

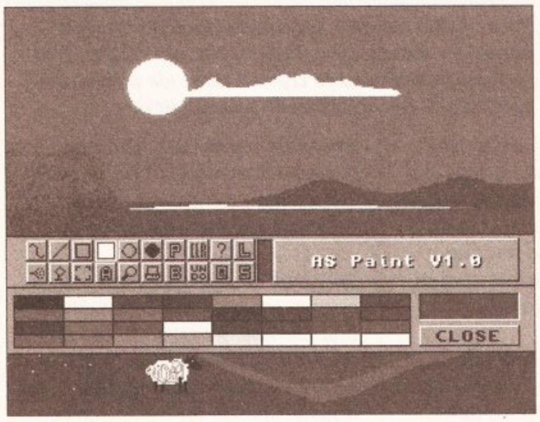
25. The technique used to draw the box is very similar to the technique we used to draw the preview of the line in the **_LINEDRAW** function. The box is drawn on to the screen and the program is halted until the next vertical blanking period before the box is removed.

26. Now that we know the exact coordinates of the box, the drawing mode is reset back to JAM0.

27. Just like the **_LINEDRAW** function, the box drawing tool can take advantage of brushes of different sizes and shapes. Once again, the box is drawn onto the screen using two different techniques, depending upon the current brush setting.

28. If the brushsize is set to zero (indicating a single-pixel brush), the box is drawn onto the screen using AMOS's own "**Box**" command.

29. If the user has selected a brush that is larger than just a single pixel, however, the box has to be drawn in four stages using the same **_DRAWBRUSHLINE** function that we used in the **line draw** function. Each edge of the box is drawn separately as a straight line, and these eventually join up to form a perfect square.



Let your artistic talents run wild with ASPaint. As they say on Blue Peter – here's one I prepared earlier!

30. With the outline box draw tool complete, we move on to the filled box tool. This is essentially the same routine but is more complicated, because AMOS's "**Bar**" command (the command that draws filled boxes) is rather picky about its parameters.

31. After checking both that the left mouse button is depressed and that the mouse pointer lies over the drawing screen, the "**Undo**" buffer is updated.

32. Once again, we'll allow the user to "rubber band" the box in real time so that they can stretch and compress it at will. The program therefore starts by switching AMOS's drawing mode to JAM3.

33. The origin of the box is then read from the mouse pointer and stored into the two variables '**X2**' and '**Y2**'. These are automatically converted to the screen coordinates system using the "**X Screen**" and "**Y Screen**" functions.

34. The routine then enters a "**Repeat...Until**" loop that is performed until the user lets go of the left mouse button.

35. AMOS's "**Bar**" command is very fussy indeed about the format of the parameters that are passed to it. The first two coordinates must be smaller than the second set. If not, your AMOS program will crash. Our filled box routine gets around this problem by constantly monitoring the two sets of coordinates to make sure that the "**Bar**" command is passed legal values. The first of these checks is made to see whether we've already swapped the '**X**' coordinates. This is indicated by the variable '**XT**' being set to 1. If the '**X**' coordinates have been swapped, they are swapped back so that we don't lose the origin coordinates when a new set of coordinates is read from the mouse pointer.

36. The second check is performed to see whether we've already swapped the '**Y**' coordinates (indicated by '**YT**' being set to 1). If they have been swapped, they are swapped back.

37. With the coordinates restored, a new set of coordinates is read from the mouse pointer and placed into the variables '**X1**' and '**Y1**'.

38. At the moment, the coordinates are in their original form, so the two flags '**XT**' and '**YT**' are reset to zero.

39. The variable '**X1**' is used as the left-hand coordinate of the box, which means it must be less than '**X2**' if the "**Bar**" command is to accept it. We therefore check to make sure that this is true. If it isn't, the two variables are swapped and '**XT**' is set to 1 (indicating that they have been swapped).

40. Just like the '**X**' variables, the '**Y1**' variable must also be less than the '**Y2**' variable. If it isn't, '**Y1**' and '**Y2**' are swapped and the variable '**YT**' is set to 1 so that AMOS knows we've swapped them.

41. The "**Bar**" command also insists that all four coordinates must be different – if '**X2**' and '**Y2**' were the same, for example, your program would crash. The program therefore check to make sure that all four values are unique before drawing the filled box onto the screen, waiting for a vertical blank and then removing it. This section of code handles

BREAKING THE CODE –

```
1. Procedure _PROCESSTOOLS[SELECTED]
2.   If SELECTED=1
      _FREEHANDDRAW
    End If
    If SELECTED=12
      _FILLAREA
    End If

3.   If SELECTED=2
      _LINEDRAW
    End If
4.   If SELECTED=3
      _OUTLINEBOXDRAW
    End If
5.   If SELECTED=4
      _FILLEDBOXDRAW
    End If
6.   If SELECTED=5
      _OUTLINECIRCLEDRAW
    End If

7.   Rem *** Rest of paint tool code goes here

    If SELECTED=18
      _UNDO
    End If
  End Proc
  '
8. Procedure _LINEDRAW
    Screen 0
9.   If Mouse Key=1 and Mouse Screen=0
10.    _UPDATEUNDOBUFFER

      Ink CURCOLOR
11.   Gr Writing 3

12.   X2=X Screen(X Mouse)
     Y2=Y Screen(Y Mouse)
13.   Repeat
14.            X1=X Screen(X Mouse)
      Y1=Y Screen(Y Mouse)

15.            Draw X1,Y1 To X2,Y2
      Wait Vbl
      Draw X1,Y1 To X2,Y2
     Until Mouse Key=0

16.   Gr Writing 0
17.   If BRUSHSIZE=0
18.            Draw X1,Y1 To X2,Y2
     Else
19.            _DRAWBRUSHLINE[X1,Y1,X2,Y2]
     End If
    End If
  End Proc
  '
20.Procedure _OUTLINEBOXDRAW
    Screen 0
    If Mouse Key=1 and Mouse Screen=0
21.    _UPDATEUNDOBUFFER

      Ink CURCOLOR
22.   Gr Writing 3

23.   X2=X Screen(X Mouse)
     Y2=Y Screen(Y Mouse)
     Repeat
24.            X1=X Screen(X Mouse)
      Y1=Y Screen(Y Mouse)

25.            Box X1,Y1 To X2,Y2
      Wait Vbl
      Box X1,Y1 To X2,Y2
     Until Mouse Key=0

26.   Gr Writing 0
27.   If BRUSHSIZE=0
28.            Box X1,Y1 To X2,Y2
     Else
29.            _DRAWBRUSHLINE[X1,Y1,X2,Y1]
      _DRAWBRUSHLINE[X2,Y1,X2,Y2]
      _DRAWBRUSHLINE[X2,Y2,X1,Y2]
      _DRAWBRUSHLINE[X1,Y2,X1,Y1]
     End If
    End If
  End Proc
  '
30.Procedure _FILLEDBOXDRAW
    Screen 0
    If Mouse Key=1 and Mouse Screen=0
31.    _UPDATEUNDOBUFFER

      Ink CURCOLOR
32.   Gr Writing 3

33.   X2=X Screen(X Mouse)
     Y2=Y Screen(Y Mouse)
34.   Repeat
35.            If XT=1
```

displaying the "preview" of the box.

42. The loop is then terminated if the user lets go of the left mouse button. The two sets of coordinates are then taken to be correct.

43. After swapping back to JAM0 (graphic replace mode) and checking to make sure that the two sets of coordinates are different, the box is drawn onto the screen.

44. Phew! That's another tool complete. Now we move on to the **_OUTLINECIRCLE** procedure that is responsible for drawing outlined circles. This too is fairly similar to the other functions, except this time we make use of AMOS's powerful blitter-based "**Ellipse**" command.

45. Once again, after checking that the user is actually trying to draw onto the screen and updating the "**Undo**" buffer accordingly, we set the graphics drawing mode to JAM3.

46. The centre point of the circle is then read from the mouse pointer and placed into the variables '**X1**' and '**Y1**'.

47. The routine then enters a "**Repeat...Until**" loop that is performed until the left mouse button is released. The first thing that this loop does is to read the radius of the circle from the mouse pointer.

48. AMOS's "**Ellipse**" command is just as picky about the format of its parameters as the "**Bar**" command, so we need to start by making sure that the two sets of coordinates that we pass are not the same. If '**X1**' and '**X2**' were to be the same, for example, the '**X**' radius value would be an illegal value of zero.

49. Obviously the radius of a circle is a value relative to the centre point of the circle, so we need to convert the "absolute" values returned by the "**X Mouse**" and "**Y Mouse**" functions into valid '**X**' and '**Y**' radius values. We start by checking to see whether the value in '**X1**' is greater than the circle's '**X**' centre point. If it is, '**X1**' is modified by subtracting the value of '**X2**' from it. If '**X2**' is greater than '**X1**', however, the value of '**X1**' is subtracted from '**X2**' and placed into '**X1**'. This gives us a legal '**X**' radius value.

50. The same procedure is then carried out for the '**Y**' radius value so that the value held in '**Y1**' is a valid radius value.

51. The "preview" of the circle is then drawn, and removed after a vertical blanking period using the "**Ellipse**" command.

52. To enable our paint program to draw circles using the brush styles that we defined last month, we need to check to see whether the user has selected either a single-pixel brush ("**BRUSHSIZE = 0**'" or any other brush ("**BRUSHSIZE > 0**").

53. If the user has selected just a single-pixel brush, the circle is drawn onto the screen using the "**Ellipse**" command.

54. If the user has selected any other brush style, we can no longer use the "**Ellipse**" function to draw our circle. We therefore have to draw it ourselves using the math functions **Sine** and **Cosine**. This takes some time, so we need to let the user know that AMOS is drawing a circle by turning the mouse pointer into a "sleepy" pointer.

55. By default, the **Sine** and **Cosine** functions use radians, which aren't really suitable for our needs. We therefore switch to more usable degrees using the command of the same name.

56. Each point in the circle must be calculated separately and therefore we use a loop that counts from 0 to 360, which plots a point for each of the 360 degrees in a circle.

57. The '**X**' and '**Y**' coordinates of our circle are then calculated using the "**Sin()**" and "**Cos()**" functions.

58. The results from these two calculations are then used as the coordinates of a point within the circumferance of our circle which is drawn onto the screen by passing the two values to the **_DRAWBRUSHPOINT** function that we covered last month.

59. The **_DRAWBRUSHLINE** procedure is a slightly modified version of the **_DRAWBRUSHPOINT** procedure. It simply draws a line in the currently-selected brush style between two coordinates.

60. The brush pattern definitions are held in a two dimension array containing eight different values for each brush. These values are extracted by using a loop that counts from zero to 7.

61. Each of the eight values assigned to each brush definition is transferred into a string variable called "**BITMAP$**" in binary notation. In many ways, this technique is the same as the technique we used to draw the toolbox gadgets. A zero in the binary pattern turns the pen off and a value of 1 turns it on.

62. Each bit in the binary pattern is extracted in turn by entering a second loop that counts from 1 to 9.

63. By default, each and every brush will be drawn on the screen using the '**X1**' and '**Y1**' coordinates as the origin at the top left-hand corner of the brush. In order to centralise the brush so that it is drawn immediately below the mouse pointer, a set of offsets is calculated.

64. Finally, a quick "**If...Then**" decision is made to check whether a point should be plotted. Using the counter that is updated by the second loop, each bit in the binary number is checked to see whether it is a 1 or a zero. If it is a 1, a dot is plotted onto the screen using the AMOS "**Plot**" command. AS

ASPaint IN FULL

```
            XT=X2 : X2=X1 : X1=XT : XT=1
      End If
36.         If YT=1
            YT=Y2 : Y2=Y1 : Y1=YT : YT=1
      End If
37.         X1=X Screen(X Mouse)
      Y1=Y Screen(Y Mouse)
38.         XT=0 : YT=0
39.         If X1>X2
            XT=X2 : X2=X1 : X1=XT : XT=1
      End If
40.         If Y1>Y2
            YT=Y2 : Y2=Y1 : Y1=YT : YT=1
      End If
41.         If X1<>X2 and Y1<>Y2
            Bar X1,Y1 To X2,Y2
            Wait Vbl
            Bar X1,Y1 To X2,Y2
42.         End If
    Until Mouse Key=0

    Gr Writing 0
43.   If X1<>X2 and Y1<>Y2
      Bar X1,Y1 To X2,Y2
    End If
  End If
 End Proc

44.Procedure _OUTLINECIRCLEDRAW
   Screen 0
   If Mouse Key=1 and Mouse Screen=0
     _UPDATEUNDOBUFFER
45.  Ink CURCOLOR
     Gr Writing 3
46.  X2=X Screen(X Mouse)
     Y2=Y Screen(Y Mouse)
     Repeat
47.          X1=X Screen(X Mouse)
      Y1=Y Screen(Y Mouse)
48.          If X1<>X2 and Y1<>Y2
49.               If X1>X2
                  X1=X1-X2
             Else
                  X1=X2-X1
             End If
50.               If Y1>Y2
                  Y1=Y1-Y2
             Else
                  Y1=Y2-Y1
             End If
51.               Ellipse X2,Y2,X1,Y1
             Wait Vbl
             Ellipse X2,Y2,X1,Y1
      End If
     Until Mouse Key=0

     Gr Writing 0
52.  If BRUSHSIZE=0
53.           Ellipse X2,Y2,X1,Y1
     Else
54.           Change Mouse 3
55.           Degree
56.           For C=0 To 360
57.                 X=Sin(C)*X1+X2
              Y=Cos(C)*Y1+Y2
58.                 _DRAWBRUSHPOINT[X,Y]
        Next C
        Change Mouse 2
      End If
    End If
  End Proc
 '
59.Procedure _DRAWBRUSHLINE[X1,Y1,X2,Y2]
60.  For A=0 To 7
61.    BITMAP$=Bin$(BRUSH(BRUSHSIZE-1,A),8)
62.    For B=1 To 9
63.          XOFF=-5+B
        YOFF=-3+A
64.          If Mid$(BITMAP$,B,1)="1"
             Draw X1+XOFF,Y1+YOFF To
X2+XOFF,Y2+YOFF
        End If
      Next B
   Next A
  End Proc
```

Talking Shop

Have your say, and perhaps win £25 into the bargain! Send your missives to: "Talking Shop", Amiga Shopper, 30 Monmouth Street, Bath, Avon BA1 2BW.

"PERUSED THE PAGES"

I am one of a small but significant group of serious Amiga enthusiasts whose specialist interest is theological study. As I have perused the pages of your excellent magazine, I have found a reference in advertisements to only one particular program relating to my particular interest and that is *The King James Bible*, a PD package which I have acquired, and which I have found to be of considerable value.

In contrast, I note that a wide range of programs have been produced on other computer formats to meet the needs of Bible students. To list but a few: the complete Bible in numerous translations, including the New International Version, the New Living Bible, the American Standard Bible, and the Good News Bible; Bible dictionaries; a Bible handbook; Bible commentaries; various Concordances; Hebrew and greek Dictionaries; a Bible Encyclopaedia; and a Bible Atlas.

It is possible that such programs have already been produced to function on the Amiga range of computers? I am sure that serious Amiga users like myself would welcome any information which could be provided through *Amiga Shopper* about additional Bible-based computer software.

John Budge
Glasgow
Scotland

Being a member of God's loyal opposition, I'm afraid I don't know of any Bible programs. However, there is a group of people who may be able to help: Bible Bureau. Contact Ad at 24 Brodie House, 10 Harcourt Avenue, Wallington, Surrey SM6 8AR ☎ 081 669 7485.

A DAUNTING TASK


£25 WINNER

I think your cover disks are a good idea. Would it be possible to include on one (or more) of them a public domain database with all the articles and so on in all issues, entered and cross-referenced, giving easy access to items which we know are there somewhere, but can't find? It's a daunting task to search by hand through the now sizeable library of *Amiga Shoppers*!

Also, I know that you try to cover all aspects of computing, but (there's always a "but"!) don't you think too much space is given over to DTP and reams of copy about fonts? In the limited space available, could we have more articles on *using* packages – painting, digitising, sampling etc.?

H J J Weddle
Heaton
Newcastle Upon Tyne

We were, some time ago, planning to release an index in conjunction with a software house, but that fell through. It's still a good idea, and one I hope to implement soon, but the information would be copyright Future Publishing, not PD.

I agree with your other point and intend to shift the emphasis of the magazine more towards the "using" or tutorial side of things. Still, don't you think articles on fonts are useful for people who want to know how to use their word processors and DTP packages?

"ONE SMALL GRIPE"

One small gripe I have is about the way that some of the public domain software is reviewed in *Amiga Shopper*. 95% of the time I find Ian's reviews useful and helpful. When I have the product he is describing, I find I tend to agree with the comments he makes.

However, I'm a developer of Windows (and Intuition!) based packages, and I feel that sometimes he is a little negative when reviewing programming or development tools. The review that finally made me write something was the one of the *Touch* program, in *Amiga Shopper* 32. Ian may not consider such tools useful, but I (and I'm sure many programmers too) find this sort of tool vital when it comes to development and project management.

If I "touch", for example, all the source files for a given project at a recognised point in the development, then later I have an obvious and effective method of checking which files have changed since that point.

This is perhaps not the best example, but the use of *Touch* is not really the point of the gripe. What I'm really trying to say is that in future I'd like to see Ian be a bit more constructive when he reviews this kind of software. If he genuinely can't see the point of something, that's fair enough, but then instead of knocking it, could he just mention it under a list of items "Also on the disk..."?

Rob Uttley
Charlton
London

I asked Ian for his reply, and this is what he said: "I'm very surprised to hear you think that, and it's certainly not my intention."

I'd add that I *do* think it's a reviewer's job to assess the usefulness of a product. Ian couldn't see a use in the case of *Touch*, and you've put him right. Fair enough.

"A BIG STEP BACK"

I notice at the end of your column that invite letters about the software which we'd like to see on the Amiga. I wonder if you would consider the subject of Windows NT? I realise that it's a processor and memory hog, and probably a big step back from AmigaDOS and Workbench. However, given that much, if not most, of its functionality already exists in the Amiga, it would not be a major job for a large company (or really ambitious PD author) to convert and could with one set make most popular software packages available for the Amiga (when they are re-written for NT, of course).

What do you think? Just how practical is such an idea?

Graham Keellings
Munich
Germany

I think writing some sort of Windows NT emulator would actually be a *huge* job, and then there's the problem of copyright...

In fact, Commodore's next machine (currently code-named the A5000 and scheduled for release late next year) is expected to have support for Windows NT. It will do so by having a processor which is compatible with the operating system – you'll be able to install it on the A5000 as you would on a PC.

In the meantime, we've been asking some of the software big guns (Microsoft and friends) if they are planning to port any of their applications programs over to the Amiga. You can read what they have to say in next month's issue.

"REPAIRED ONCE BEFORE"

Back in May I bought an 85Mb hard drive from Diamond Computers at their Manchester store. Recently it started to behave badly, with checksum errors and so forth. Trying to contact Diamond proved fruitless, and I finally found out they had gone bust.

A friend suggested I contact the drive manufacturer (Western Digital), which I did. The lady I spoke to there told me they would honour the guarantee. Great, I thought, one hard drive repaired by the manufacturer and no more problems. She asked me a for a few details about the drive, including its model number, and then asked if the drive had already been repaired once before. I told her no, that I had bought it brand new, but she insisted that what I had was a reconditioned drive. I was given a repair order number from the manufacturer to send the drive back to the factory in Singapore for the repair to be carried out.

What I want to know is, who else besides me got ripped off by being sold reconditioned drives disguised as new ones?

Barry Miller
Widnes
Cheshire

I'm sure this must be an isolated incident. Well, I *hope* it is, anyway. It just goes to show, you can never be too careful.

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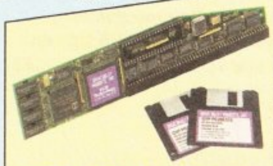
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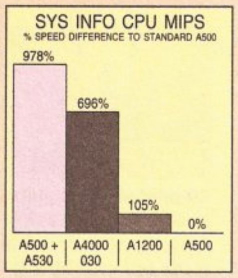
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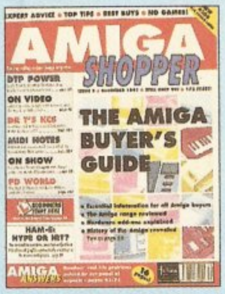
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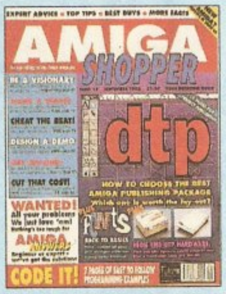
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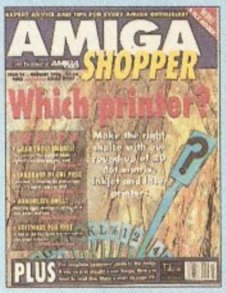
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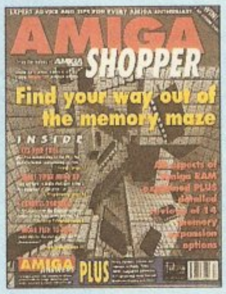
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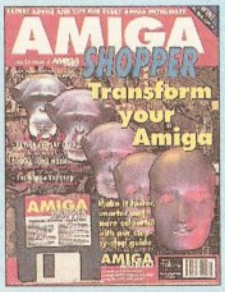
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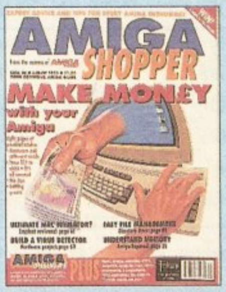
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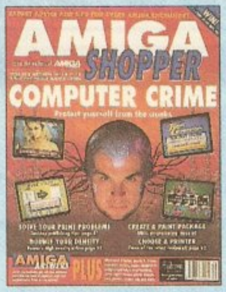
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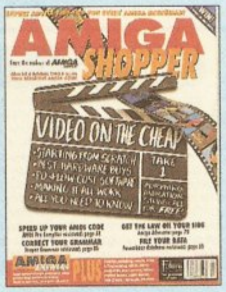
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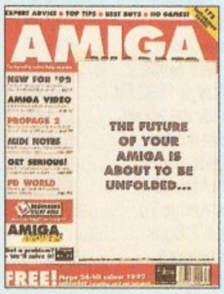
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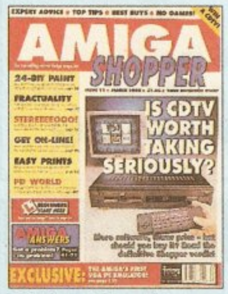
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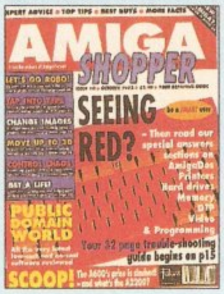
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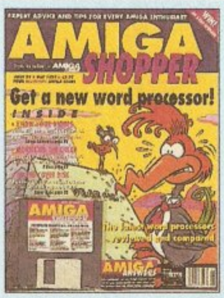
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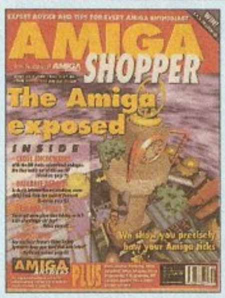
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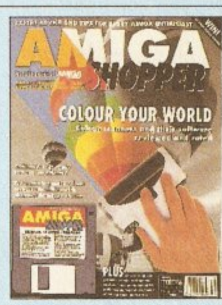
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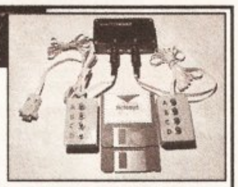
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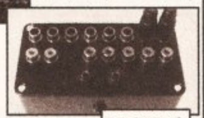
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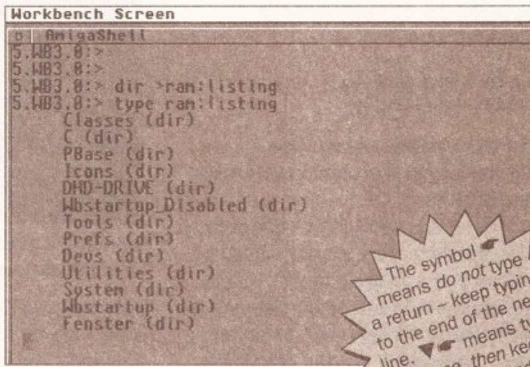
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Cracking the Shell

Mark Smiddy demystifies one of the most powerful, and yet most misunderstood, features of the AmigaDOS Shell – re-direction.



Using the basic redirection operator ">" we can send the output from any command to a file.

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

Re-direction: even the term is enough to make your brain itch. It describes a technique where the console window's input and output stream handles are changed to some other file handle. A file handle could be a real object on disk or another virtual terminal: AmigaDOS will not know the difference. (Actually, that is not entirely true, but I'll come back to that shortly.) It all sounds rather hair-raising, but once you get the hang of the terms it falls into place in an instant.

What it means in plain English is this. Normally you deal with AmigaDOS through a "console window" – a window which displays simple text input and output. When you type a command, you see it on-screen; when AmigaDOS "replies", you see its message on the same screen. Re-direction simply means taking input from another file rather than the keyboard, or sending AmigaDOS's output messages to another file instead of the screen. This is done by changing the file "handles", which are analogous to handles in the CB radio world – ways of identifying a file, so AmigaDOS knows which file you mean.

Now, what do we mean by a file? A file is a named object referencing zero or more bytes on a mass-storage medium – but we never describe it as such. Work you have saved from a piece of software – an AmigaDOS command – is a file. (It could be argued that even the Kickstart ROM is a file, albeit a very large one.) We use the term "file" as an analogy because the effect is similar to paperwork stored in a filing cabinet. Likewise, we arrive at the term "filing system" to describe the complex software and hardware that looks after the files.

When the operating system grants access to a file, it returns a 32-bit address known as a BPTR (BCPL pointer) to a "lock". The lock uniquely identifies the file by its device handler (say **trackdisk**) and its physical position on the storage medium (a sector number). Of course, you neither need nor want to be bothered with any of this. A lock is also called a "handle" – the analogy being something you can grasp hold of. The terms "lock" and "handle" can actually be used interchangeably, although "lock" is the more common term in programming circles.

LOCK PICKS

Locks are worth discussing in more depth because they are central to the process of re-direction. AmigaDOS has several kinds of lock. An exclusive (write) lock grants the handling process sole access to a file: nothing else can read or modify it. A shared (read) lock is the opposite: any number of processes can receive access to the file. Once shared access has been granted, AmigaDOS will not grant exclusive access. (Think about that for a moment, it's quite sensible.)

AmigaDOS commands create and delete locks constantly without ever bothering you. However, certain operations are not possible on locked items. For example, if a file has been opened by some application and you try to delete it, AmigaDOS will fail with the message: "not deleted: object in use". Similarly, you cannot make an assignment to a file because the lock information contains the type of object (file or directory).

This basic knowledge of files and locks is not essential to understanding re-direction, but it helps. To summarise: files are like doors. Once a file is locked it cannot be opened; and an open file cannot be re-opened until it is closed.

INFORMATION FLOW

A transfer of information between two devices is often called a data stream because data is said to "flow" between the two places. This is quite unremarkable until you try to think of a console's input and output stream handles. How can a console (the Shell window) have handles?

As far as AmigaDOS is concerned, every console is two open files: one read, the other write. Anything you type at the keyboard – the input stream (CIS or Console Input Stream) – is delivered to the input handle, and anything a command sends back is written to the output handle or COS (Console Output Stream). Re-direction enables the user to temporarily alter either or both of these streams for the duration of one command.

This might sound about as useful as a chocolate fireguard, but it is one of the most powerful features in the Shell. It enables us to send output from a command to a file, or control commands based on the result of some other operation. Three operators are used to indicate re-direction:

> xyz	Re-direct current output stream to XYZ.
>> xyz	Append current output stream to XYZ.
< xyz	Take input stream from XYZ.

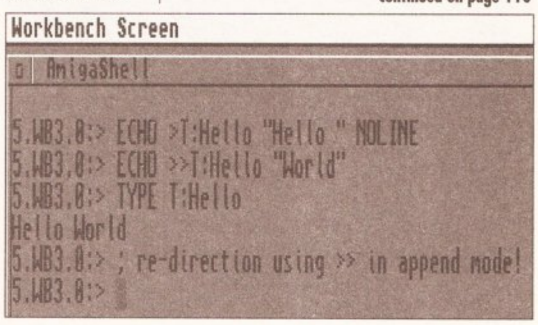
The re-direction operator is followed by the name of any legitimate file (including a path) and can appear anywhere on the command line after the command itself. By convention, the operator is usually placed immediately after the command, but this is not necessary.

NEW DIRECTIONS

The most useful re-direction operator is ">" or re-direct output. When the Shell encounters this it takes the next phrase on the line and attempts to open it as a file. If the operation is successful, the command's output is sent to that file. Here's an example:

```
1>DIR >RAM:Listing
1>TYPE RAM:Listing
```

continued on page 110



The ">>" operator is used like ">" but appends the output from a command to an existing file.

BEGINNERS START HERE

If you are new to the Amiga, the very idea of AmigaDOS – an environment where you have to learn and type commands, one at a time – might seem a little daunting. Why not just stay within the comfortable confines of the Workbench and handle the tricky bits with a CLI utility like *Directory Opus* or *SID*?

There are a number of reasons, but "eclecticism" is a good one. This greasy adjective is typically used in the art world meaning to be selective. I choose it to illustrate a point: AmigaDOS is full of big, strange-sounding words that mean little until they are applied. An AmigaDOS user can be eclectic by choosing the best of several similar commands to achieve a similar goal. The *SID* or Workbench user must remain within the confines of the application's design – no matter how open-ended it purports to be.

Few people would disagree that many operations are more easily performed from Workbench, but very few operations can take full advantage of the machine's multi-tasking capabilities. For instance, what if you wanted to copy some files from one place to another? With Workbench you simply drag the respective icons from the source to the destination – from AmigaDOS you have to enter a command.

Now what if you suddenly realise you have copied the wrong icons? You have to wait until Workbench finishes, go back and delete them, and start again from scratch. This can happen when you use AmigaDOS but you can stop the command immediately – so the total time to complete the operation is much shorter. In addition, AmigaDOS allows you to select files by group much more accurately than is possible from Workbench. It also affords simpler access to a range of public domain and shareware utilities that can only be accessed from the Shell environment.

AmigaDOS is powerful and perhaps a little difficult to learn – Workbench is great for everyday tasks when you are not in a hurry. The two systems complement each other wonderfully. You can "get at" AmigaDOS by opening the Shell icon – you'll find it on your Workbench disk. Even if you have never done so before, try it now – you have nothing to lose.

TYPE is used to view the file created by Shell – although you could use **MORE** or **MULTIVIEW** (AmigaDOS 3) just as easily.

White-space can be included between the operator and the filename thus:

```
1>DIR > RAM:Listing
1>TYPE RAM:Listing
```

but this is unnecessary. Use whichever you feel comfortable with and stick to it.

Generally speaking, re-direction files are temporary, so they would be stored in the **T:** assignment. This is generally set to the **RAM:** disk and is expected to contain only temporary files. Therefore it is good practice to use this in any lines that employ re-direction:

```
1>DIR > T:Listing
1>TYPE T:Listing
```

OUTPUT RE-DIRECTION (APPEND MODE)

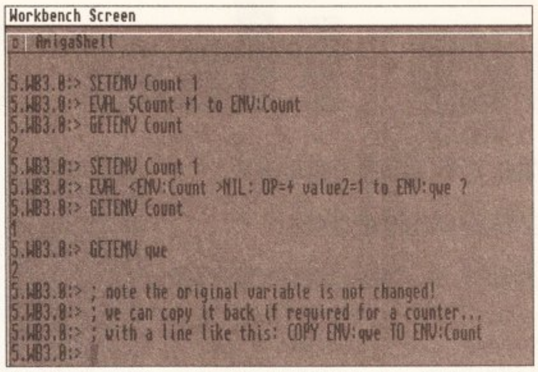
When output is being sent to a real file – that is, not a terminal or some other non-filing-system (disk) device – then you can make use of the **append** mode. This is similar to normal output, but every time a new command line is entered, the output is tagged on to the result from the last. This is similar to the **JOIN** command. Append mode output re-direction is achieved using "**>>name**". Here is a tediously clichéd example, for want of a better one.

```
1>ECHO >T:Hello "Hello" NOLINE
1>ECHO >>T:Hello "world"
1>TYPE T:Hello
Hello word
```

In AmigaDOS 2 and above, if the file does not currently exist it will be created for you. Be extra careful to remove such temporary files created in scripts – they will cause havoc if the script is executed more than once and the bug can be a beggar to find.

INPUT RE-DIRECTION

Re-direction of the input stream is not usually necessary from AmigaDOS 2 and above. It's been replaced by environmental variables which are much more convenient. For instance, the following is valid in AmigaDOS 2+:



Reading variables using "<" is fiddly but unfortunately it is the only option if you have Workbench 1.3.

```
1>SETENV Count 1
1>EVAL $Count + 1 to ENV:Count
1>GETENV Count
2
```

Shell expands the second line automatically, so **EVAL** reads the line thus:

```
1>EVAL 1 + 1 to ENV:Count
```

This is not possible in the earlier versions, so we have to use a trick with an input re-direction operator like this:

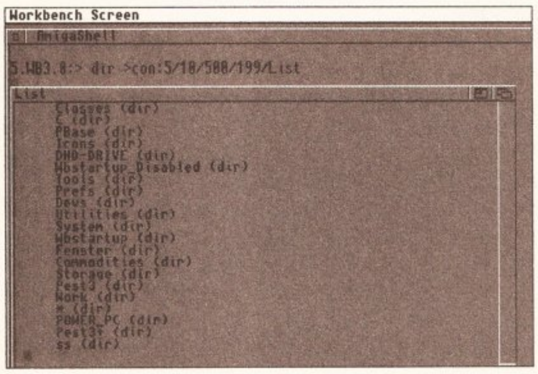
```
1>SETENV Count 1
1>EVAL <ENV:Count >NIL: ▼☛
        OP=+ VALUE2=1 to ENV:qwe ?
1>GETENV qwe
2
```

This looks a little frightening at first because the line is so much longer – be thankful if you have a more recent version. It breaks down like this:

EVAL Is the command itself – EVAL comes from evaluate meaning to calculate an expression.
<ENV:Count Means "take input from the file '**ENV:Count**'." This file is automatically created in the **ENV:** assignment by **SETENV**.
>NIL: Sends output to the **NIL:** device. **NIL:** is a dummy device (described later) and this operation suppresses unneeded output.
OP=+ Describes the operator to use (addition). A keyword (**OP**) is used so the primitive parser in 1.3 can work out where it is.
VALUE2=1 Send the value to the calculation. **VALUE2** is a keyword used as above.
to ENV:qwe Tells **EVAL** where to put its result. The result cannot be placed directly back in the same file it has been taken from because the file is already in use (locked) by the Shell. If you need to use the result in a script loop, the temporary file "**qwe**" should be copied over the original, like so:

```
1>COPY ENV: ☛
qwe to ENV:Count
```

? This triggers **EVAL** into interactive mode and is the single most important part of the command line. The query operator is usually used to get help from any command, but it also allows the parser to retrieve output from the current input stream interactively. The result of this is that **EVAL** gets the first argument from the environmental variable, **Count**.



The console device CON: can be used as a file, even with re-direction. Each "directory" is a position on-screen.

Don't worry at all if this seems beyond you at this stage – it is a difficult area and one which you will learn with practice.

RE-DIRECTION WITH DEVICES

I mentioned that a console window looks like a pair of open files. This means that the console device looks like two open files, so the following would seem to be true.

```
1>DIR >CON:
Shell error: unable to open
redirection file.
```

• In late releases such as AmigaDOS 3, this is a valid statement, but should not be used for compatibility. If later Shells fail to open the file the error is returned like this:

```
1>DIR >CO:
dir: unable to open redirection
file.
```

The console device looks like a disk drive with lots of numbered directories, each one representing a position on the screen. When it's used you should specify a "directory path" corresponding to the position, size and name of a window to open like this:

```
1>DIR >CON:5/10/500/199/List
```

You will note that the window closes as soon as the listing is completed. This is because the console "file" is closed by the Shell as soon as the command is completed. You can prevent this happening in AmigaDOS 2 and above by specifying the **CLOSE** and **WAIT** switches as part of the path:

```
1>DIR >CON:5/10/500/199 ☛
                    /List/CLOSE/WAIT
```

Other AmigaDOS devices can be used in the same way. For example, you can use re-direction to get a hard copy of all the files on a disk like this:

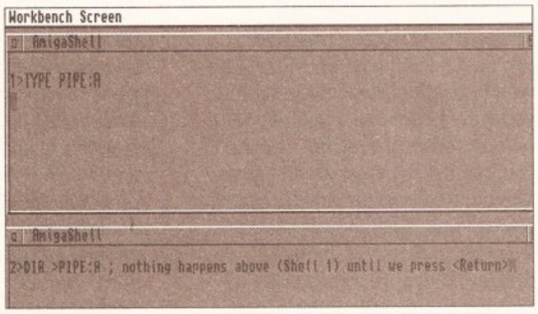
```
1>DIR >PRT: DF0: ALL
```

Possibly a more interesting example uses the **pipe** device. The **PIPE** must be "mounted" before it can be used. In version 1.3 this is a simple matter of entering:

```
MOUNT PIPE:
```

But in release 2 and higher, the **PIPE's** icon should be moved into the **DEVS/DOSDrivers** drawer and the machine re-booted.

In this example, I'll be transferring information between two Shells (indicated as **1>** and **2>**) without using a temporary file:



Pipes can be used effectively with re-direction – for instance, they are ideal for communicating between two Shells without a temporary file.

```
1>TYPE PIPE:A
2>DIR >PIPE:A ALL
```

Note how **TYPE** seems to jam while it waits to receive output from the **PIPE:**.

SHUT UP!

Since any device can be used for output, it is also possible to tell a command to shut up completely by channelling its output to the dummy sponge device, **NIL:**. Consider the following example:

```
1>LIST >NIL:
```

Such fiddles do have a purpose though. For instance, you might want to suppress output from some command while it works. While many commands support a **QUIET** mode, a few do not. Moreover, when the **QUIET** switch is used, errors are still reported to the current window (*). Re-direction to **NIL:** fixes this one permanently. Study this example, but *don't execute it* unless you are about to re-boot your machine.

```
1>DELETE >NIL: RAM:#? ALL
```

SOFTWARE for free

This month, it's a Fred-Fish-free zone as Ian Wrigley catches up with some home-grown low-cost and no-cost software...

No Fish disks this month – instead, I've taken the opportunity to look at some of the disks sent in by PD libraries, disk magazines and authors of PD, shareware and licenseware.

Speaking of licenseware, some people are against including software that's sold in this way in the PD World column – they say that in effect it's commercial software. However, personally I think that it's a perfectly reasonable way for authors to get some money from their endeavours – and an easy way for people to pay shareware fees, since in essence that's what you're doing when you buy licensware: a percentage of the sale price goes to the author. That way, they don't get as much money per program as if it were released as true shareware, but at least they're sure that every user has paid something – which, sadly, is not the case with normal shareware.

Anyway, enough of all this. Let's get down to the software!

LSD TOOLS 127

Roberta Smith DTP disk UT547

LSD Tools 127 is a fairly standard collection of utilities, encompassing some useful programs – such as *ToggleClick*, which turns that annoying floppy disk drive clicking off, and *CKick*, which loads any KickStart (for people who run, say, KickStart 2.04 most of the time, but occasionally need to use 1.3 to access a certain program). However, there are a couple of rather less useful utilities included too, like *ClickHere*, which puts a tiny requester on the screen with the message "click here" in it. Being an obliging sort of soul, you do – and the program quits. What a marvellous piece of programming ingenuity that is, and many thanks to LSD for including it on the disk. Very witty, I don't think.

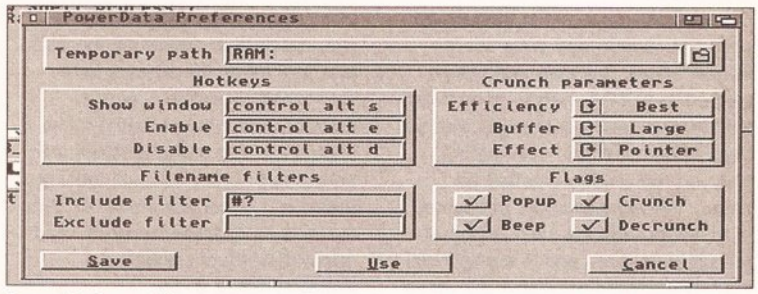
Here's a list of the more useful things on the disk:

- *SKick* and *CKick* – Load other Kickstarts
- *SD* – Super Duper copier
- *ToggleClick* – Turn floppy drive clicking off
- *TWC* – Comms package
- *Logicshop* – Create and test logic diagrams
- *Viruschecker*
- *Dost* – SnoopDOS clone
- *Trashmaster* – Replacement for the standard Trash.

I'm not particularly keen on the fact that the disk autoboots but doesn't have a Workbench display – you have to do everything from the Shell. And since the number of commands included in the **C:** directory is somewhat limited – *PPMore, Run, Type* and the *Nuke* anti-virus program are all that's there – all you can do is run the programs on the disk and read their documentation. Why on Earth at least the **Dir** command wasn't placed on the disk is totally beyond me.

Still, I guess this is a reasonable collection of utilities. And since Roberta Smith DTP only charges 90p per disk plus 50p post and packing, you may well decide that it's worth getting.

Value for money 7/10



PowerData enables you to use PowerPacker transparently to compress all your files – regardless of the program you created them in.

POWERDATA

Round about *Amiga Shopper* 25, I looked at a program called *PowerData*, which would have been great had it worked. Well, now it does – the author, Michael Berg, has upgraded it to fix the bugs (which were apparently due to a feature of WorkBench 2.1 that wasn't implemented in earlier versions of WorkBench).

Quite simply, the program transparently adds compression – using the popular cruncher *PowerPacker* – to any program, with no user interference required. So when you save a file, it will automatically be compressed for you, whether you're in *Protext, DPaint III* or whatever. Open a file and it will be decrunched before the program attempts to read it.

This is an excellent idea, and one that's been popular on computers like the Mac for some time. It can drastically reduce the amount of space that files take up on your hard disk, and is ideal for anyone feeling the pinch of limited

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BEGINNERS START HERE

What is PD?

PD is a general term which many people incorrectly use to refer to all freely-distributable software. In fact, PD (which stands for Public Domain) software or "freeware" is only one branch of this area; the other main one is shareware.

Essentially, freeware may be copied and used by anyone, although some authors place restrictions such as not allowing a PD library to charge more than a certain amount for the disk.

Shareware, on the other hand, should be treated more like commercial software. Although you are allowed to copy and pass around shareware programs, if you like one then you should pay the requested fee to the author – it's normally around £15 or less, and often entitles you to an upgraded version or a printed manual. Paying your shareware fees encourages software authors to write more programs – and if they don't, the Amiga scene will be a poorer place. Don't think that you're paying money for nothing, either – often hundreds or even thousands of hours of work have gone into creating a program, and it's only right that the programmer receives some reward for his or her hard work.

The third branch of software that we cover here is called licenseware. This is a form of shareware which is licensed to one (or more) PD libraries. In essence, when you buy a licenseware program you are buying shareware and paying the license fee at the same time. For this reason, you should treat any licenseware that you buy exactly as you would treat a piece of full-price commercial software – don't pass it around to your friends. You've only bought the right to use it yourself.

Can I pass other people copies?

Yes – that's the way that PD reaches a wider audience. Just make sure that you have followed the author's requirements for distribution. These are normally things like not charging more than a certain amount for the disk, not altering the program, or making sure that all the original documentation is included on the disk.

You can also pass on shareware – but not any registered copies of programs. If, when you pay your shareware fee, the author sends you an improved version of the program, then be careful not to give that out. Only pass on unregistered shareware.

You should not, of course, pass on licenseware – it should be treated in the same way as registered shareware.

RATING THE PROGRAMS

Just to be awkward, I rate the software that I review in two different ways, depending on what it is. Disk magazines, collections of clip art and the like are given a "value for money" rating, since you're essentially paying for one thing, or group of things, on the disk.

Single programs which appear in a collection of others, or programs which I've downloaded from bulletin boards, are given a "program rating", which reflects how good I think they are, taking into account usability, bug-proofness, my own particular (or should that be peculiar?) tastes and so on. Both ratings are out of a maximum possible 10.

storage space.

You control the program via an easy-to-use Preferences requester, where you have a surprisingly large range of options. For instance, you can choose to compress or not compress files depending on their names – not attempting to further compress archives created with a program like *LhA*, for example – and set the level of compression depending on whether speed or file size is more important to you.

The only problem with *PowerData* isn't really the program's fault at all. It's so easy to use (once it's set up, you don't have to do anything else with it at any time) that you tend to forget it's installed on your Amiga. And since it makes sense to have the program work on all files (even icons), pretty soon almost the entire contents of your hard drive will be PowerPacked. But then when you give disks to other people, they'll find that they are unreadable until they've been decompressed – something that you'd probably forgotten all about. The easy solution, of course, is to let your friends have copies of the program too – and that way it will soon propagate throughout the whole Amiga world.

PowerData is shareware; it displays a requester each time it's started, and will quit after 20 minutes of use. But the shareware fee is only $10, and it's so useful that I encourage everyone to check it out and then register. With luck, this will become one of the most popular Amiga shareware programs around!

Program rating 10/10

COMMUNICATE

Your Choice PD

Communicate is a PD program written in compiled AMOS by John Cassar. It's intended as an educational program for anyone who needs (or wants) to learn any of a range of "languages": two-handed sign alphabet, one-handed sign alphabet, deaf-blind sign alphabet, Braille, semaphore, "flags" (ship signalling flags), Morse code and a "Naughts (sic) and Crosses" code. There is also a font on the disk for the Naughts and Crosses code, if you have a burning need to word process in such a manner.

The program itself is impressive, and includes well-drawn images of the flags, hands and so on. You can be tested by the program, can get it to show you any given letter in the language, and can even enter a sentence and have it display the signals, symbols or whatever for that sentence. This is where the graphics really do look slick: for letters such as "H" in the two-handed sign alphabet, for example, where one hand slides across the other, the gesture is actually animated – excellent. (The usual problem with AMOS programs, unfortunately, means that I can't screengrab the program, and you couldn't see the animation anyway, so you'll have to take my word for it...)

If you have any desire to learn sign language or semaphore, I highly recommend that you get hold of a copy of this program. I tend to think that Morse code is better learned using a program which signals to you, rather than displaying the dots and dashes on the screen, and indeed Braille teachers would probably recommend that you use a textbook where the characters are embossed rather than just looking at them on the monitor. However, this remains an excellent program, and one well worth checking out.

Program rating 9/10

EDWORD PROFESSIONAL v4.0

EdWord has been around for some time – version 2.2 was released about a year and a half ago, and was featured on an *Amiga Shopper* cover disk (the one with issue 25 – if you want to order that, see page 106). Now version 4.0 of this great £10 shareware program is out – and it's well worth getting hold of if you need a text editor.

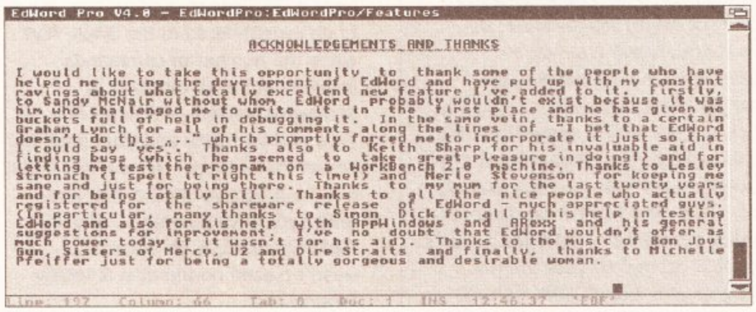
The list of features is huge, but here are some of the more impressive ones:

- **Multiple documents**. Up to 15 documents can be edited at a time (assuming, of course, that you've got enough memory to do that), and you can copy and paste between them. There's even a split screen option, so that you can view two documents at the same time – and the amount of the screen that each document has can be altered by clicking and dragging on the split marker. This is something that I haven't seen in any other text editor on the Amiga, and it's a feature that's incredibly useful.
- **Macros.** This seems to be a requirement in Amiga text processors these days, and *EdWord's* is just as good as any other's.
- **PowerPacker support.** The program will optionally decrunch any files which have been compressed with *PowerPacker* before it attempts to read them in. Of course, if you have *PowerData* then you won't need this feature...
- **A "text casing" feature.** Specific keywords can be forced to a specified case – for example, all BASIC keywords can be forced to capitals, regardless of how you originally typed them. This requires a configuration file listing those keywords, and a couple are supplied with the program.
- **An ASCII table** of characters, along with ASCII codes, so that you can insert any character into the document just by clicking on it.
- **A built-in RAM virus checker.**
- **An auto-save feature.**

Add to this things like one of the fastest word counters I've come across, "live" scrolling as you drag the scroll bar around, and many more equally impressive features, and *EdWord Professional* becomes almost mandatory if you need a text processor. My only complaint is that the unregistered version produces a requester every three minutes or so, reminding you that you haven't paid your shareware fee – but since the cost is only £10, and includes things like over 160K-worth of AmigaGuide-format documentation, I'm sure that any users will soon register anyway.

EdWord Professional is well worth investigating if you need a text processor. And if the author added a couple of things like automatic word-wrapping, it would make a damn fine word processor too. Check it out.

Program rating 10/10



EdWord has always been good, if not quite a word processor, and the new Professional version is a rather fine text editor – well worth checking out.

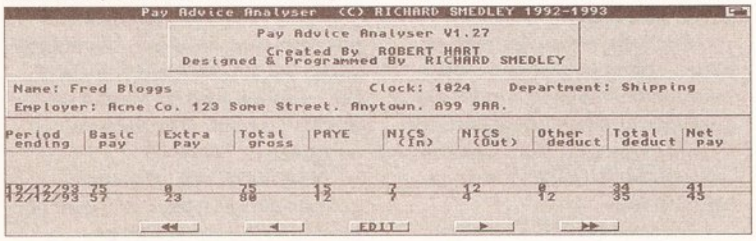
PAY ADVICE ANALYSER

Virus Free PD disk 3127

This is a £5 shareware program by Richard Smedley, written after a friend was complaining to him that it was hard work keeping track of his weekly payslips. In essence, the program is a basic database, but one that's been customised for just the one task: recording payslip details for easy perusal.

The data fields are pretty simple, and should cover most of the things that you'll find on a standard payslip: things like basic pay, extra pay, PAYE, National Insurance contribution details and so on. The program automatically calculates the totals and your net pay, giving you a quick check that the details on the payslip are correct. Once you've entered the details, you can save the file with a password, to prevent anyone else seeing just how much money you make.

The demo version of the program has two features disabled: **Send to printer**, which, as you'd imagine, prints out the whole list; and **Put into Date Order**, which will order your entries chronologically – very useful if you've entered a whole slew of payslips into the program for the first time regardless of order. Because these two features are pretty much essential, anyone using the program is bound to pay up the shareware fee, but personally I don't like programs with features disabled – it seems to me that this goes against the "honour" concept of shareware, though I suppose you do still get to test whether you like the program. Still, each programmer to his own, and I'm sure that some people will find this program useful. However, do remember that, as Richard says in the documentation, you must still keep all your payslips at least until the end of the financial year even if you use the program to record all the details – a computer record won't be any use in case of a dispute. And, of



Pay Advice Analyser: no more ferreting around in the bottom drawer for your payslips when the Internal Revenue invite you round for a nice "desk audit"...

GET IN CONTACT!

If you've written – or discovered – any PD, shareware or licenseware that you think should be reviewed in these pages, or if you've got any other comments or suggestions, write to Ian Wrigley c/o *Amiga Shopper*, 30 Monmouth Street, Bath BA1 2BW. Alternatively, you can contact Ian on cix as 'iwrigley', or on the internet as 'ian@vampire.demon.co.uk'.

PD Soft

CUT, TICK & POST

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PD SOFT 1 BRYANT AVE, SOUTHEND-ON-SEA, ESSEX, SS1 2YD

❑ PD-Soft Font Disk 01
AachenBold AachenLight AARCOVER Adjutant Agate Albatross Alexandria Alison americanuncial Andromeda Architect andesiteplain AlexAntiqua

❑ PD-Soft Font Disk 02
Arctic2 Ariston Ashley Author Avlon AvantGarde Baskerville BauhausBold BauhausLight BauhausThin BeckerMedium BEDROCKLIGHT BEESWAX BEFFLE BenguiatBold BenguiatLight BellBottom Benjamin BENJAMINCAPS

❑ PD-Soft Font Disk 03
BillboardBMR BIZARRO Blackforest BLADES BlippoHeavy Bodacious BodilyBold BorzoiReaderBold BorzoiReaderItalic BorzoiReaderPlain BUBBLE BurtObli Cairo

❑ PD-Soft Font Disk 04
Caligula Camberic Caraith CascadeLight CarawayBold CHILLIPEPPER Caslonlight CaslonOpenface ChiTown ESKIE Cartoon CAVEMAN Chancery CharlieChan Chicago

❑ PD-Soft Font Disk 05
Cloister Cochin Columbus Crillee COMARO CRACKLINGFIRE COBJERSEY CooperHighLight COTTONWOOD CSDBlock Cunieform CSDChalk Dauphin

❑ PD-Soft Font Disk 06
Daytona Debussy Devandra DickensBold Dickens Deigollight

❑ PD-Soft Font Disk 07
Delegate DIGITALROMAN DubielItalic DINER DINERFAT DINEROBESE Dubiel DEUSEX Dorovar Dorovarltalic Dragonwick DrafterLight DUPUYHEAVY DUPUYLIGHT DUPUYREGULAR

❑ PD-Soft Font Disk 08
EDDACAPS EIRE ElsjergScript Elgarrett ELIZABETHANN ENGRAVERLIGHT ErasBlack EstroFont Eurostile Faktos FARQUHARSONFREE

❑ PD-Soft Font Disk 09
FetteFraktur Flemish FlemishItalic FloraBold FLINTSTONE Fremont FlorenceLight FoxScript Flora FranklinGothicBold FranklinGothicLight FrankTimes FreshScript FrizQuadrataBold FoxTrot FrizQuadrataThin

❑ PD-Soft Font Disk 10
Frankfurt FunctBold FunctItalic FusionBold Fusion FuturaBold FuturaBold FuturaThin Futuri GALLEDIS Gordon Garton GenoaItalic Gismonda GLACIER GLACIERITALIC GothicShadow

❑ PD-Soft Font Disk 11
GoudyHundred GoudyMedieval GOUDYTWENTY GraphicLight GREEKCAPS Gregorian GROENING Harlow Harquil Harrington

❑ PD-Soft Font Disk 12
Harting2 HEADHUNTER Heidelberg Helvetica HelveticaOblique Hermosa HOLTZSCHUE HORSTCAPS Hotshot Hoskers HowardFat HowardThin ISLOLASER Inkabod

❑ PD-Soft Font Disk 13
IRONWOOD ISADORACAPS Jacksonville JUNIPERTHIN Kaufmann Thin KASTELLAROPENFACE Kathlita

❑ PD-Soft Font Disk 14
Arctic2 Ariston Ashley Author Avlon AvantGarde Baskerville BauhausBold BauhausLight BauhausThin BeckerMedium BEDROCKLIGHT BEESWAX BEFFLE BenguiatBold BenguiatLight BellBottom Benjamin BENJAMINCAPS

❑ PD-Soft Font Disk 15
BillboardBMR BIZARRO Blackforest BLADES BlippoHeavy Bodacious BodilyBold BorzoiReaderBold BorzoiReaderItalic BorzoiReaderPlain BUBBLE BurtObli Cairo

❑ PD-Soft Font Disk 16
MacHumaine MANZANITA Maraige MarkerFeltThin MarkerFeltWide MathMajor McGarey MEDICI Medusa MESOZOICGOTHIC MicroTiempo MIDNIGHTDISPLAY MiamiNights MicroSerif

❑ PD-Soft Font Disk 17
Middleton Mira Mistral MonotonyBook Navert NeuClub NewBaskerville NewBold NewGarrett

❑ PD-Soft Font Disk 18
NewCentury NewsGothic NewsGothicBold Nordic NovareseBK Olympia NovareseBKItalic OldEnglish OldeWorldBold ORBIT OXNARD OregonDry OregonWet Orleans

❑ PD-Soft Font Disk 19
OswaldBlack OswaldGrey PalatinoBold Paltino ParadisLight Parisian PARISMETRO ParkHaven PeignotLight Phoenix PigNose PixelScreen Pixie PoloSemiScript

❑ PD-Soft Font Disk 20
PlayBill PostAntiquaLight PostAntiquaRoman POSTCRYPT PresentScript PsychedelicSmoke RenssNote ReckleHiddenScript RELIEFDECO Revued RevueThin

❑ PD-Soft Font Disk 21
Richard Murray Rickshaw RICKMAKER Roissy RoissyBold RoostHeavy Rudelsberg Sailor SaintFrancis SansSerif SARATOGA Schwartwald SEARCHLIGHT SEGMENT SHADOW

❑ PD-Soft Font Disk 22
SHOWBOAT SHRAPNEL Silicon Skeleton SLANT SlapFace Slantinf Slogan SNOKONEITALIC SNYDERSPEED

❑ PD-Soft Font Disk 23
Souvenir Squire STARBURST Style STEELPLATE STENCIL Stymie STRONGMAN Sydney STRONGMANBOLD Tempus TEJARATCHI Tekton Tempo TempoItalic

❑ PD-Soft Font Disk 24
TiffanyThin TiffanyHeavy TimesLefty Tintoretto TNGMONITORS TONEANDDEBS Toulouselautree TOYBLOCK TRIBECA Tyme UMBRATHIN ULTRALINE UltraBlack

❑ PD-Soft Font Disk 25
UNCIALIS UniversityRoman UtopiaBoldItalic UtopiaBold UtopiaItalic UpperWestSide Upsilon VAGRounded Venus VictoriasSecret Vireo WALROD WEDGIE Weiss

❑ PD-Soft Font Disk 26
Western WHATAREELIEF WHARMBY WILLHARRIS WindsorDemi Yamato WOODCUT ZALESKI ZephyrScript ZALLMAN

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❑ ^+ **V366 600 BUSINESS LETTERS** Over 600 Standard Business letters
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❑ ^+ **V662 DCOPY v3.1 PRO** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy
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old of that extra hard game & Cheat.
❑ ^+ **V685 ASTRO ASTROLOGY v3.0** Best Astrology program on the Amiga
❑ ^+ **V686 MULTIDOS v1.12** After this program has been installed your Amiga drives can then read 720k IBM Disks.
❑ ^* **V690 WB 2/3 UTILITES** Contains the programs that should have been with WB 2.x Take full advantage of the many NEW capabilities that are available. **(2)**
❑ ^+ **V710 AREXX TUTORIAL** Includes several samples of Arexx scripts & some sample programs. ARexx comes free on all WB v2.x and better machines.
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❑ ^+ **V959 AMIGA_E v2.1b** Specific compiler. E is a powerful and flexible procedural programming language
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❑ ^+ **V1001 VMORPH v2.21** Will allow you to create smooth morphs/warps bet-ween two different images over a period of frames to create an animation.
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❑ ^* **V1017 POST v1.86** An excellent Postscript interpreter for the Amiga which implements the full Adobe language **(3)**
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❑ ^+ **V1022 LITTLE TRAVELLER v1.1** Shows a world map & you can select any country for travel information, Zooms up another close up map with more detail.
❑^+ **V1023 QUIZ** Contains Questions & Answers with the option to add
❑^^ **V1024 (AGA) MANDELSQUARE v1.6** Generate enhanced AGA set images, requires numerical coprocessor. You can create 256 colour coloured pictures
❑ ^* **V1025 TERM v3.4** Comm prgroam, Xpr transfer, filetype ident after download, cut & paste, point-and-click, auto upload/download, VT102/ VT220, Ansi emulation, powerfull phone book & AGA support **(3)**
❑ ^+ **V1035 FES BASIC** Just in time for all the new machines which do not have Basic with thier machines any more.
❑ ^^ **V1037 (AGA) A1200 WB HACKS** An excellent collection of Utilities & Hacks
❑ ^+ **V1038 AMOS PRO UPDATER v2.0** 1st Update to the Amos Professional
❑ ^^ **V1039 (AGA) WB3.0 INSTALL** If you need to install your A1200 HD then you need this. Also requires disk V1075
❑ ^+ **V1040 bBASEIII v1.3** An easy to use, versalite, yet full featured database. Greatly enhanced successor to bBASE II.
❑ ^+ **V1041 DIGITAIL BREADBOARD** Full featured digitall circuit simulator
❑ ^* **V1043 SUPER DARK v1.5** A screen blanker like After dark from the MAC
❑ ^+ **V1044 FANCY PRINTING** Banner, Graph Paper v1.2 and Disk Print v3.59.
❑ ^+ **V1045 uDRAW v1.0** Provides a mechanism for the rabid drawing of schematic diagrams. Bitmap oriented
❑ ^+ **V1046 THE XI RAVE SAMPLES** Grarett Watt's IFF 808 State samples
❑ ^+ **V1051 EASY CALC v1.0** A spread sheet designed to be both easy to use and fast. Built in excellent help system.
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❑ ^+ **V1062 DESKTOP PUB** Transfers Macintosh screen fonts .AFM metric files to Amiga fonts/PPage .metric files.
❑ ^+ **V1063 RIPPERS, STRIPPERS & BEATS** For the music enthusiast, design-ed to strip music from your favorite games
❑ ^+ **V1067 3D OBJECTS 3** About 20 objects in Sculpt / Turbosilver format
❑ ^+ **V1069 PRINTER DRIVERS 5** Desk-jet 550c, 500, 500c, Ricoh HP1200, Canon BJ300, 130, LPB, 10e, PJ1080a HP Paintjet.
❑ ^^ **V1070 (AGA) UTLs 2** 256 colour icon editor, Plamsa256, QuickGrab v1.1
❑ ^^ **V1071 (AGA) MSM v1.8** Martins system monitor for programmers
❑ ^^ **V1072 (AGA) WINBLENDER v39.28** Create excellent/stunning AGA fractals. Also contains 68030/040/FPU versions.
❑ ^+ **V1073 FT-X ACCOUNTS v2.01** Was written as there are not ready any other good packages.
❑ ^^ **V1074 (AGA) UTLs 3** Collection of AGA Based utilities. Includes Kill AGA Which allows you to run old badly written programs incluing demos & some games
❑ ^* **V1077 GENEALOGIST v3.04** Is a specialized database for keeping track of genealogical information. Full featured & a wide selection of features to use.
❑ ^+ **V1078 PC TASK v2.03** Software IBM-PC emulator. It allows you to run the majority of PC software with no additional hardware. Now supports VGA, EGA, CGA and MDA. Full version £49.99 see below
❑ ^+ **V1079 KEYBOARD TRAINER v1.1** Best Public Domain Typing Tutor
❑ ^+ **V1081 REPAIR-IT 3** Contains a selection of Disk, Hard Drive repairing and file saving utilities
❑ ^+ **V1083 CROSS v5.1** is a program that creates crossword puzzles for you
❑ ^+ **V1084 SPECTRUM EMULATOR v1.7 (2)** This is the best & latest version of the most popular emulator for the Amiga. There is an 020/030 versions now on the disk which enhance the games
❑ ^+ **V1087 STOCK ANALYST** Technical analysis and securities tracking program which calculate when to buy & sell shares
❑ ^* **V1088 WB 2.0+ UTLS** Contains ChkFrag, DFC5, FastDos, Formatter, No-Click, UnDelete, KeyMac, MegaWB, MR, 1 Plane, OpenL, ResumeMaker & StarBlank.
❑ ^^ **V1090 ANDYS (AGA) UTLs** Another selection of utilities for A1200 owners also encludes FakeMem, KillAGA, AGATest, Degrader and more.
❑ ^+ **V1091 ASTRONOMY v2.0** A menu driven astronomy program that cal-culatoes information about the Sun, Moon, Planets and Constellations.
❑ ^+ **V1092 HEROQUEST AID** Will aid solo AD&D players who do not have a Dungeon master at the present time. It takes over the DMs role.
❑ ^+ **V1093 PARNET SET-UP (2)** A two way network file system between two parallel ports, establish via two amigas
❑ ^* **V1095 DEGRADERS** If you have trouble running software on an A1200 or A4000/030/040 give this disk a try it will emulate the basic 1.3 rom better that any other software on the Amiga
❑ ^+ **V1096 MING SHU CHINESE ASTROLOGY** Will create a horoscope in seconds not hours. the complete aid.
❑ ^+ **V1097 TITANIC CHEATS v1.40** Contains 950k of raw data which is just a whisker under 600 games. Well presented
❑ ^+ **V1101 RJ UTLs** This disk contains helpful image processing and painting programs. Like Perfect Paint v1.34, Image Workshop v1.3, an IFF Manipulator.
❑ !* **V1102 DT UTLs** Contains Border for WB v2.04+ machines, MakeKickFile, SKick v3.34, is a replacement for kick-it, Z Kick and LKick kickers. It will softkick any other version of kickstart into ram.
❑ ^+ **V1103 TEK-ATAK MODULES** An excellent helping of wonderful music for your own productions or to listern to.
❑ ^* **V1104 COLOURED ICONS** Transfer your disks into colouful well presented works of art with this database.
❑ ^+ **V1105 VIEW TOOLS** Contains Convert, ViewTree, a Familt tree easy to use database progra. ViewPhone, an Britsh telephone storage database. ViewDisk, is a small disk catalogue utility.
❑ ^+ **V1106 MAJOR LEAGUE** Allows you to keep track of your favorite teams and there results.
❑ ^+ **V1114 PRINT LABELs** DocDump2.1, Envelope Print v1.2, Inlay Maker v1.4, MC master v1.1, Banner Press, Label Print v3.5
❑ ^+ **V1124 FIRST ALERT VIRUS** BootX, EVN v2.22, LVD v1.75, MVK v2.2, No Saddam, SnapShot, VC, Virus X, Virus Z.
❑ ^+ **V1125 LEMMINGS 2 INSTALL** This disk will install Lemmings 2 to your hard drive. 1Mb Chip RAM + 512k RAM
❑ ^+ **V1133 NUMPAD v37.3** Emulates a numeric keypad on some Amiga Keys.
❑ ^* **V1134 TOOLMANAGER v2.1 (2)** Includes the ability to add menus to your Tools menu. add WB icons or Windows.
❑ ^* **V1136 DISK UTLs 2** Copy_C A tool for making backup copies, formatting ect. DiskMate A multi drivedisk copier. Disk Salv 2 Disk repair, salvage & undelete utl. HDClick, HD menu & workbench tool.
❑ ^^ **V1137 (AGA) UTLs 4** Test, BBlank, CheckAGA, CycletoMenu, Doublex, Force VGA, GIF Datatype, PKLudge, PPShow, Rend24, ViewTek & Verlauf
❑ ^^ **V1138 (AGA) UTLs 5** Degrader, Pov-Ray, AmigaToDouble, CardMemLast, Palette, Promotor, RomTagMem.
❑ ^^ **V1139 (AGA) UTLs 6** A4091Patch, Alert Timer, Bestid, Clouds, Ham8 JPEG, NewPOP, NTSC4NTSC, PatchPointer, Plasma PCX & Screen Mode changer.
❑ ^+ **V1140 FOOTBALL FORECAST** The latest and most upto date football results prediction prg
❑ ^+ **V1141 MANDELPLOT v2.4** Does't just produce 2d fractals, can view them in 2d or 3d modes, make animations, even design your own fractals. Fastest mandel-brot producer
❑ ^+ **V1144 GRAPHICS** Contains JPEG files, DJPEGGui v37.1, MakeAnim7, BestAGA anim playback. S-Anim-5 v1.1, S-PIC v1.2
❑ ^+ **V1145 MENUMASTER III** If you want to produce a simple menu system this is it wether for a hardsk or floppy disk
❑ ^+ **V1147 EASYBENCH** Contains a wide selection of utilities which covers almost all the best utilities on the Amiga **(2)**
❑ ^+ **V1152 GOLDED V.94 (2)** A GUI Based editor with lots of functions/options (about 250), DICE compiler front end, OS3 look & functions, folding paragraphs, fully customizable menus, Hotkeys, Autoback-up, Insert columns, Clipboard, And more.
❑ ^+ **V1153 AMIGABASE v1.31** programmable database, features inclu-de 2 display methods, filter datatypes, search, print, string, memo text, date, time, Data only limited by memory size.
❑ ^+ **V1154 MAGIC MENU V1.27** Replaces all Intuition menus, supporting both pull-down and Pop-Up menus. Menus can be displayed in a 3d
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❑ ^+ **V1158 BACK TO SCHOOL (2)** a collection of the best Public Domain & shareware educational programs which will demostrate to the youngest kid how to learn on the computer whill having fun.
❑ ^+ **V1160 NOSTROMO CHEATS v1.1** The best adventure solution disk ever made with over 500 arcade cheats.
❑ ^+ **V1161 GOALKEEPER v1.0** Computer soccer administration program, Create your own Mini Football leagues upto eight teams, Fit for the European, UK leagues. or just use with Kick-Off 2.
❑ ^+ **V1164 ASI A1200 FIX DISK** Contains all what you would need for getting disks to work on your new a1200 computer.
❑ ^+ **V1174 SAMPLES UNLIMITED** A selection of instruments for all music programs like OctaMED, Sound Tracker.
❑ ^+ **V1175 UDM v3.0** Do you want to produce a utility disk of your own, well this disk will put you on the right track.
❑ ^* **V1176 NO SAMPLER UTILITIES** Contains Hunter III, Fraxion Ripper, Sample Maker, R.I.P
❑ ^+ **V1177 BETTERBENCH** Yes its another intresting Workbench utility disk packed 99% full of utilities and documents
❑ ^+ **V1178 KICKSTART 3 EMULATOR** This disk is a multi kickstart selection utility disk, You can select Kickstart 1.3 (34.005) Kickstart machine (as it is) Kickstart 3.0 (39.106) No AGA picture support but you do have a superior Workbench ect.
❑ ^+ **V1179 FILE-O-FAX** Designed for you to work at your own leisure without worrying about forgetting those important meetings, or names, address, tel No's
❑ ^+ **V1180 BACK TO SCHOOL 3** Contains Treasure Search, ReflexTest, Type or Die, more educations programs of kids
❑ ^+ **V1181 COLOUR THE ALPHABET** This program is for early learners which may help with letter & colour recognition and a bit of counting too. For the younger kids.
❑ ^+ **V1182 IRREGULAR VERBS** This is a Quiz game based around: subject Verbs

❑ ^+ **3411 KINGDOMS AT WAR** This is a 1 to 4 player Risk type game with neat and colourful graphics and presentation.
❑ ^+ **3412 THE LAST REFUGE** Is a Space invaiders variant set in the middle ages.
❑ ^+ **3413 DARKSTAFF** Is another classic game this one from the spectrum world
❑ ^+ **3414 CONQUEST & DOMINATION** An excellent straregy war game in which you can battle with troops, Tanks, Guns, Planes, Bombers, battle ships. Replace amol, oil, with trains, tankers. Build buildings, get more fuel, balance your funs, buy and sell and much more.

Prices are Per Disk

3-5	Disks	£2.75 EACH
6-10	Disks	£2.50 EACH
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Font Disks (Adobe / Scalable)

£3.00 .... PER DISK
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POSTAGE & PACKING 50P

Just Released! CD4: Aminet CDROM (£24.99 + £1.00 P&P) Just Released!

The Aminet CDROM contains thousands of Amiga programs from the Aminet Internet Archive. This disc contains nearly 600 megabytes of software. The thousands of applications include GNU programs such as the GNU ANSI C/C++ compiler, the GDB symbolic debugger, GNU Emacs, the Ghostscript previwer, and GNU Chess. There is a huge selection of sound files, and utilities to play them, including Noisetracker and MED modules. This disc contains hundreds of games, including educational games, video and arcade games, strategy games, war games, card games, and word games. The disk contains many modem communication programs and BBS software.
The Aminet CDROM is in ISO-9960 format, so you can read this disc from nearly any system, including Amiga and IBM PC, BBS index files are included for popular MSDOS BBS's. This disc is brand new in 1993. Also contains Workbench 2 and Workbench 3.0 sections. Full of software & shareware.

PC TASK (FULL VERSION) (£44.99 + £1.00 P&P)

The famous PC software based emulator for all Amigas from Chris Hames now is in stock direct from us here at PDSoft.

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course, there's always the danger of a hard disk crash...

Program rating 6/10

POOLS-WIZARD JUNIOR

This is an AMOS program designed to improve your chances at predicting score draws and generally winning a fortune on the pools. It's public domain, although for £10 the author will send you a more complete program (called, unsurprisingly, *Pools-Wizard)* which includes an improved prediction engine and one or two other extras.

I've seen a number of similar programs in the past, and I must say that this is one of the easiest to use – and, indeed, one of the best looking. Data entry is simple, and you don't need to enter the team's full name every time – handy if you start using it half-way through the season and have to enter something like "Hamilton Academicals" a dozen times. Instead, you can just enter the first portion of the name and the program will replace it with the full name. If there are two or more teams which match the first portion of the name, hit the + key and the next one will be displayed.

After you've entered the results for a few weeks, it's time to start making predictions. Again, this is simple: enter team names and the program will tell you whether you're likely to be a millionaire at the end of the day.

At the end of the season, of course, teams will be promoted and relegated – and here you can really see how much thought has gone into the program. Teams can be moved about through divisions with simple button clicks ("relegate" and "promote", for instance), and should the powers that be decide to alter the way that points are awarded for wins, draws, losses and so on, this too is easily alterable by simply clicking on the appropriate requesters.

All in all, this is an impressive program and one that pools punters will no doubt want to try out. The only problem is that we're already well into the footy season – so entering all the results will be something of a tiresome process. Perhaps the program's author, Paul Nicholls, could think about sending out updates of league positions and results on disk for a subscription fee? Anyway, it should be available from the major PD libraries by the time you read this – Paul's sent it to most of the major ones, but recommends Penguin PD, who only charge 90p per disk and who have already written back to say that they'll be including it in their library.

Oh, and does it work? Well, Paul says that it performs at least as well as one other popular prediction program, and better some of the time. The fact that its bigger brother (the one you get if you send him £10) has an "improved" prediction mechanism suggests that perhaps you won't actually win that £2 million next Saturday, but it's good for interest and a laugh anyway. If you use it and you do make a fortune, do let me know!



Pools-Wizard Junior: it's a funny old game, Saint... and so is trying to work out the dividend formulas!

Program rating 8/10

DISKMANAGER III

Kew=II disk U1021

Way way back, many centuries ago (well, in *Amiga Shopper* 20, anyway), I reviewed *DiskManager 2* by Andrew Woods. And here it is in an all-new, improved version.

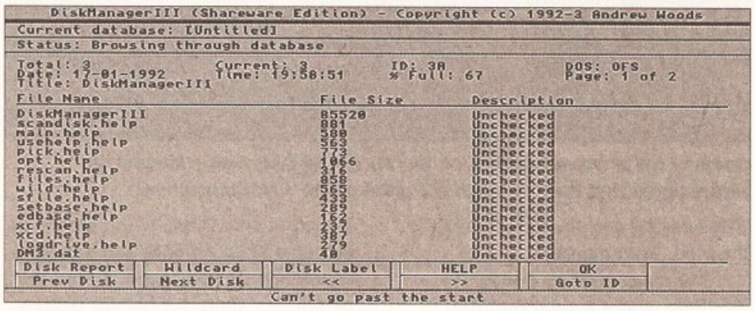
DiskManager keeps track of your floppy disks for you, by creating a database of their contents. Scanning disks is a simple process of inserting them and choosing **Scan Disk** from the menu (and then clicking **OK** on the annoying "you haven't registered yet" shareware requester). Once you've catalogued all your disks, you can then do a number of things with the database. For instance, you can find a specific file on any of the disks – since you can enter a title and comment for each disk, of course

you'll then be able to find the disk from that huge pile balanced precariously on the edge of your desk, won't you...? Even more usefully, you can look for disks with more than a certain amount of free space on them – great when you really need to back up your work files but you can't remember which of those cryptically-named floppies only has a couple of files on it and which are full to the brim.

The program recognises a range of different program types, so you will be told that, for instance, "**makeamillion**" is an AMOS file while "**begtobank**" was created in your word processor. All useful stuff, and anyone thinking of setting up a PD library, or anyone with a large number of floppies lying around, would do well to check this program out. My only real complaint is that in the report view you can't do anything such as quit from the program – even though the menu items are still enabled. It would be nice if the program either allowed you to do such things or at least dimmed the menu items so that you know to click on the "**OK**" button before trying to do anything else. Still, this is a minor quibble, and certainly doesn't detract from the program's usefulness.

DiskManager III is certainly well worth its £10 shareware fee, just for the "search for free space" feature – and floppy-only users needn't worry: it works fine without a hard drive, storing the database on the same floppy disk as the program itself. But just remember to label it...

Program rating 9/10



DiskManager III: keep a track of your floppy disks with this great utility – it even remembers how much free space there is on each. Now that's handy!

PLOTTERS

PDSoft disk V1068

PDSoft do a number of this type of disk: collecting several similar programs and sticking them all on one floppy. Some are more useful than others, and occasionally it looks as though the programs have been selected by title rather than by function – as you'll see with this collection. Regardless of that, though, the disk contains a couple of useful graph plotting programs, and is certainly worth checking out.

First up is *Amiga Plot 1.3,* a three-dimensional function plotter. According to the documentation, it "takes a function derived by the user, parses it into a partially compiled form and then calculates coordinates to be placed in the **xyz** system." What this means in practice is that you get the kind of cool 3D graphs that no-one knows quite how to create but everyone loves. Seriously, the program is fast, works well and gives you full control over things such as rotation of the image, the increments in **x** and **y** co-ordinates used to plot the graph and the range of both **x** and **y** axes. You can even save the image out as an IFF file – which is what I did to get the picture on this page.

PlotXY is a two-dimensional plotting program, which plots graphs from data points rather than from a formula – great for scientists and others who want to get a graphical representation of data. It deals with different types of graph – linear, linear-log, log-linear, log-log and histograph – and enables you to add grids, titles, legends for the axes and so on. There are even different options for the look of the mark used to show where each data value lies.

Finally on the disk is – *Amiga Plot 2.0.* Yes, for some reason both versions 1.3 and 2.0 are on the same disk. Perhaps it's because one of the programs is named "**aplot**" and the other "**plot**". Still, there's really no reason to have two versions on the same disk, and it would have been nice to see a standard, two-dimensional function plotter included instead.

Version 2.0 has plenty of improved features over 1.3, although the basics are still the same; it's mainly user-interface considerations that have been changed, although the author does also claim a 10 to 15 percent speed increase.

Value for money 7/10

VIDEOBASE

I know, I know, I said that I wasn't going to review any more database programs unless they were something extremely special, but I thought that I'd give this one a mention since it was written by John Cassar, the same person who wrote *Communicate* (reviewed on page 112 this issue). It's a fairly standard video database program, created in AMOS, but it has enough useful features to be worth mentioning. For starters, it's rather more intelligent than most. As an example, if you enter a film time in minutes (85, say), the program automatically converts that to "1:25" – rather than stupidly assuming that you meant 85 hours, or asking you to re-enter because it doesn't understand.

Many of the fields have automatic values, which cycle as you click on them. The certificate field, for instance, cycles through U, PG, 12, 15, 18 and XX (there isn't room for the third X). (Although in fact there's no such thing as a 12-certificate video, unless I'm mistaken; the 12 certificate is for films only.)

There is room for five programme titles per video, and underneath there's a graphical and text display of how much of the tape has been used and how long is left – but for standard and long-play machines. This enables the program to offer a "find empty space" option – ideal if, like me, you've got loads of tapes lying around with a few minutes blank at the end of each one.

I've said it before, and I'll say it again: I don't really see why anyone would want to take the time to fire up their Amiga, load a program and then search through to find a specific videotape. Unless you've got whole roomsfull, it's quicker just to scan the labels. However, if you're the sort of person who really does want to do the whole thing on computer, *Videobase* is probably about the best around. And it's free, too.

Program rating 8/10

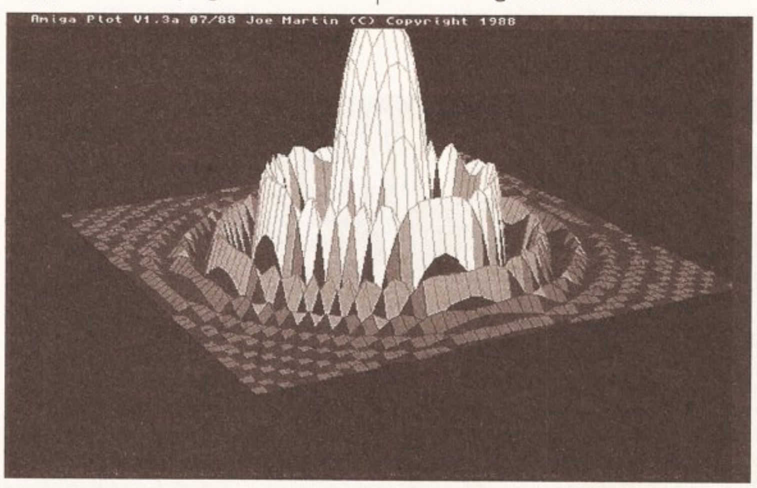
Disk magazines

There have been a few disk magazines sent in over the last few weeks – many from the "old faithful" crowd. Here's the pick of the crop...

DIGITAL DISK ISSUE 3

This is the third issue of *Digital Disk,* and it gets better with each issue. It's available free (issues 4 onwards will cost real money) and it's available from Digital Disk Publishing, 70 Donald Drive, Chadwell Heath, Romford, Essex RM6 5DU. Just send two blank disks (it's a two-disk mag) and a stamped, self-addressed envelope.

Contents include the running "interactive adventure", which is a narrative story with the story



Amiga Plot: just one of the programs on PDSoft's disk V1068. Cool or what? (Actually, you even get two versions of the program, but we won't quibble...)



Digital Disk issue 3: this disk magazine gets better with each issue, with game reviews, features on music and AMOS, and an "interactive adventure".

direction decided by the majority vote of readers. I'm not keen on the thing, I have to admit, but I'm sure that many people like it. There's a decent news section, which covers the Amiga and also the Atari ST family (the disk is multi-format, and available on the Amiga, ST and PC – although the PC version has been postponed for a month or so, apparently to write a new front-end and put some new staff members in place). There's an AMOS tutorial, reviews of games, space for reader ads when some are sent in, features on computer and conventional music (sadly the authors seem to lean towards "house music" as a favourite style, but I suppose we can't have everything...), pictures, song lyrics (from most of REM's *Automatic for the People* album in this issue)... something, as they say, for everyone.

The only trouble with the magazine seems to be that there hasn't yet been much reader feedback – no letters, for example, on the letters page. With luck, as more people get to hear about the mag, this will change – it certainly deserves to succeed.

A "trial subscription" is £10 for four issues, or you can subscribe for a whole year for £26 (12 issues). However, if you mention *Amiga Shopper* when you subscribe, you'll get £1 off that rate. And you can't say fairer than that!

Value for money 8/10

NOTHING BUT AMOS

Nothing But AMOS (or *N.B.AMOS* for short) is, as you might have guessed, a magazine strictly for – and written in – the popular AMOS programming language. Yes, written in, because the viewer is apparently the result of months of coding effort. It's certainly slick, with nice chunky 3D-effect buttons for scrolling and so on (although the scroll up and down buttons confused me for a while – the upwardly pointing button scrolls down through the text). It's a shame that the programmer, Neil Wright, seems to have decided to only use the NTSC portion of the screen for the text viewer, meaning that the bottom third or so is blank – why couldn't the text take up the whole screen area, as the pictures do?

The content of the disk is divided into articles, pictures and music. The articles are well written, and include plenty of program fragments, although the images aren't particularly wonderful.

Subscribing to *N.B.AMOS* brings a few extra benefits, along with the monthly disk magazine: reduced prices for disks from the PD library (£1 instead of £1.50), access to the source code of the disk mag for £4.99, and even a "debugging service" – send in your problem program and the team will attempt to debug it for you, free of charge! (Of course, *Amiga Shopper's* Code Clinic will also do the same for you... this issue it's on page 46.)

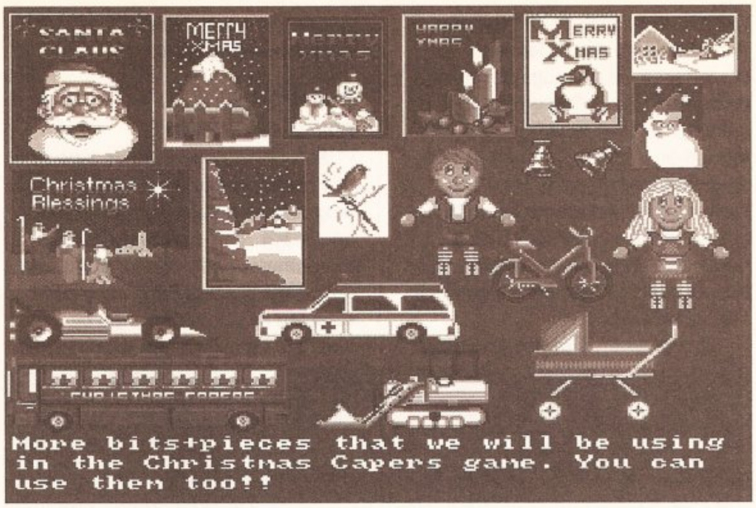
N.B.AMOS costs £2.50 for one issue, or £24 for a full year's subscription. Cheques should be made payable to J Rutherford or N Wright, and should be sent to *N.B.AMOS,* c/o Neil Wright, 39 Riding Dene, Mickley Square, Stockfield, Northumberland NE43 7DL.

Value for money 9/10

MR AMOS CLUB DISK

And... yes, another AMOS newsletter! This one's from the Mr AMOS Club, which has been running for a little over six months – and has already got almost 850 members. Brian Bell, the bloke who runs the club, was responsible for the *Charlie Chimp* game that recently won the *GamesMaster*/Europress competition to design a game in AMOS – it was given away on the cover disk of our sister magazine *Amiga Format's* May edition.

The club's aim is, according to Brian, "to teach all budding AMOS users out there how to write winning software like *Charlie Chimp* and make a fortune of it all." The club is busy on a number of programming projects including a *Streetfighter II* clone *[Editor's note: this is apparently some sort of (shudder) computer game, I understand],* and these will be explained in detail in the club disk magazine.



Some of the artwork supplied on the Mr AMOS Club disk – images so professional that they're worth the price of the disk themselves!

The magazine has a nice interface, and it's clear that the programmers are very accomplished AMOS coders. However, unless the disk is auto-booted the text face is nearly impossible to read – it's a very narrow, compressed face, and while I could just about make everything out on my monitor, it would certainly have been a real strain if the Amiga had been connected to a television instead. The text only covers half the screen – a good thing, since taking up the entire display would really have made things impossible. This really is a problem that should be addressed, though – it could well put many people off, especially since much of the text is in colour, which adds to the legibility problem. If you autoboot the disk, everything is fine – the font is a nice, chubby, easy-to-read affair and covers the whole of the screen. But I didn't realise that this was the case for some time, and the designers should take into account the fact that many of us don't autoboot disks unless we absolutely have to.

The contents of the disk include programming tutorials, contacts information and so on, reviews of programs created in AMOS, and AMOS add-ons such as the compiler, along with some very nice artwork. I looked at disk three, which contains a couple of great fonts and lots of characters for you to use in your own creations – there's a picture on this page of the contents of one of the files, and you can see just how professional it all is.

The actual programming tutorials aren't the very best that I've seen, but aren't too bad; and in the "advanced programming" section of the disk I viewed, Brian gives some good advice about how to pick subject areas that will make you the most money if you want to program commercially. Disk four will, he says, talk about marketing your products.

Even if you only get the disks for the artwork that's included, they're well worth the price. And the extra information thrown in means that they are an invaluable resource to any AMOS programmer, from beginner to professional.

Issue one of the club disk costs £1, issues two and upwards cost £2.50 in the UK, inclusive of postage and packing. The disks come out bi-monthly, and if you send a cheque for more than one issue you'll get the new releases as soon as they're ready. To order, make your cheque payable to Brian Bell and send it to The Mr AMOS Club, 8 Magnolia Park, Dunmurry, Belfast BT17 0DS.

Value for money 9/10

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WHERE TO GET IT

There are two main ways to get hold of Amiga PD and shareware: from a bulletin board or from a PD library.

The advantage of using a bulletin board (BBS) is that often the latest software is uploaded as soon as it's available. On the downside, you need a modem to connect, and you'll have to pay phone charges (and sometimes a connection fee to the BBS as well).

There is a growing number of BBSs with a wide range of Amiga software available for download. Check out 01-for Amiga (071 377 1358) and the Cheam Amiga Bulletin Board (081 644 8714). Another good option is joining CIX (the Compulink Information eXchange), which not only has Amiga software but also contains conference and file areas on a wide range of subjects. Many of the *Amiga Shopper* writers have accounts on CIX, so you can get first-hand advice on your problems, too. For more details, call CIX on 081 390 8446 (voice) or 081 390 1255 (modem).

If you don't want to use a BBS or haven't got a modem, the other way to get PD software is from a PD house. Many advertise in *Amiga Shopper,* and there's a full directory overleaf. Expect to pay between 99p and about £2.50 per disk – there's often a discount if you buy in bulk, too. As for the difference between companies which charge 99p and those which charge £2.50 – well, try both types. There are brilliant, totally professional PD houses which charge less than a quid, and total incompetents which charge more than twice that.

UK PD HOUSES • UK PD HOUSES

***An asterisk by a library's name means see its advert in this issue for further details.**

A1200 Only PD. Contact B J Cowdall, 27 Pheasant Way, Cirencester, Glos. GL7 1BJ.

AMOS PD, 1 Penmynydd Road, Penlan, Swansea, SA5 7EH.

***Amiganuts United,** 1 Daffern Avenue, New Arley, Coventry CV7 8GR.

Amiga Productivity PD Series, 51 Ennors Road, Newquay, Cornwall TR7 1RB. Contact M J Docking.

***Anglia PDL,** 30 Victoria Street, Felixstowe, Suffolk, IP11 7EW, ☎ 0394 283494.

***Anim1 PD,** 2 Fatherwell Avenue, West Malling, Kent ME19 6NG.

Armchair PD, 180 Blackton Close, Newton Aycliffe, Co Durham DL5 7EY.

Artman, 40 Northwell Gate, Otley, West Yorkshire LS21 2DN. Phone 0943 466476.

Asgard PD, 20 Langdale Drive, Flanshaw, Wakefield WF2 9EW. Phone 0924 363059.

Batty's PD. Contact Ian or Lynn Battison, 7 Denmark Road, Northampton NN1 5QR. ☎ 0604 22456. Life membership £3.99.

Beats Brothers, 6 Brownings Close, Pennington, Lymington, Hampshire SO41 8GX.

Belshaws PD. 55 Baldertongate, Newark, Notts. NG24 1EU, ☎ 0636 72503.

BG PD, 6 Peter Street, Whitehaven, Cumbria CA28 7QB.

Blitterchips, Cliffe House, Primrose Street, Keighley, BD21 4NN, ☎ 0535 667469.

BTK, 7 Callander Road, Catford, London SE6 2QA ☎ 081 473 1650.

Bus Stop PD. Contact Lisa or Cheryl, 6 Smiths Avenue, Marsh, Huddersfield HD3 4AN, ☎ 0484 516941.

C and C PD. Contact Chris Wildman, 3a The Cedars, Tilehurst, Reading, Berks. RG3 6JW, ☎ 0734 411131.

Chris's PD, 22 Merryfields Avenue, Hockley, Essex SS5 5AL.

Colwyn PD. Free, non-profit-making PD, membership £5 per year. Contact Andy Roberts, 17 Gladys Grove, Colwyn Bay, Clwyd LL29 7YB, ☎ 0492 533442.

Computer & Design Services, 24 Blackmoor Croft, Tile Cross, Birmingham B33 0PE. ☎ 021 779 6368

***CP PD,** 3 Dunedin Crescent, Winshill, Burton on Trent, Staffs. DE15 0EJ, ☎ 0283 516736.

Crazy Joe's, 145 Effingham Street, Rotherham, South Yorks, S65 1BL, ☎ 0709 829286.

Crazy Software PD, 50 Woodville Court, Portobello, Wakefield, West Yorkshire WF2 7DU.

Deja Vu, 7 Hollinbrook, Beech Hill, Wigan WN6 7SG, ☎ 0942 495261.

***Diskovery PD,** 108 The Avenue, Clayton, Bradford, West Yorkshire BD14 6SJ, ☎ 0274 880066.

Essex Computer Systems, 118 Middle Crockerford, Basildon, Essex, SS16 4JA, ☎ 0268 553963.

Eurodisk PD, PO Box 2, Radlett, Herts WD7 8QL.

***Express PD,** 47 Aberdale Road, West Knighton, Leicester LE2 6GD, ☎ 0533 887061.

***Five Star PD,** 48 Nemesia Road, Amington, Camworth B77 4EL. ☎ 0827 68496.

George Thompson Services, Bridgegate Centre, Martinfield, Welwyn Garden City, Herts. AL7 1JG, ☎ 0707 391389.

***GVB PD,** 43 Badger Close, Maidenhead, Berks. SL6 2TE, ☎ 0831 649386.

Haven Computing, 15b Meeching Road,Newhaven East Sussex BN9 9RL,☎ 0273 513491

Highland PD. Free list contains lots of education, business and games disks. Contact David Paulin, 255 Drumrossie Avenue, Inverness IU2 3SX ☎ 0463 242431.

Holmes Brothers Compilations. Contact Craig for monthly compilation disk. 23 Rocester Avenue, Wednesfield, Wolverhampton, West Midlands WV11 3AU. ☎ 0902 733418.

Hornesoft PD. Contact Chris Horne, 23 Stanwell Close, Wincobank, Sheffield S9 1PZ, ☎ 0742 422000.

ICPUG (Independent Commodore Product Users Group), PO Box 1309, London, N3 2UT, ☎ 081 346 0050.

Immediate Arts, 26 Lyndhurst Gardens, Glasgow G20 6QY. ☎ 041 946 5798.

Judge Dredd's PD, 1 Nottingham Road, South Croydon, Surrey CR2 6LN.

***Kew=II Collection,** PO Box 672, South Croydon, Surrey CR2 9YS, ☎ 081 657 1617.

***KT's PD.** 75 The Drive, Rochford, Essex SS4 1QQ, ☎ 0702 542536.

Langham PD. Contact Richard Payne, 89 Wolverhampton Road, Codsall, Wolverhampton WV8 1PL

Logic PD, 8/5 Glenalmond Court, Sighthill, Edinburgh EH11 4BE.

Magnetic Fields, PO Box 118, Preston, Lancashire PR2 2AW. ☎ 0772 881190

Mega PD, 78 Bockingham Green, Basildon, Essex SS13 1PF. ☎ 0268 559164 / 0621 828527

NBS, 1 Chain Lane, Newport, Isle Of Wight, PO30 5QA, ☎ 0983 529594.

Network PD & Shareware Library, Kenmare, Co. Kerry, Eire. ☎ 010 353 64 41603

***NJH Computers,** 12 Meesons Mead, Rochford, Essex SS4 1RN. ☎ 0702 546796.

Numero Uno. Contact Dillon Eyre, 21 Burstall Hill, Bridlington, N Humberside YO16 5NP, ☎ 0262 671125.

Orbital Software. Contact A Flowers, 37 The Orchard, Market Deeping, Peterborough, Cambs. PE8 8JR, ☎ 0778 342064.

Pathfinder PD, 41 Marion Street, Bingley, W Yorks. BD16 4NQ, ☎ 0274 565205.

Penguin Public Domain, PO Box 179, Reading, Berkshire RG3 3DD.

***PD Soft,** 1 Bryant Ave, Southend-on-Sea, Essex, SS1 2YD, ☎ 0702 466933.

Premier PD, 45 Fairfield Gardens,Eastwood, Leigh-on-Sea,Esses SS9 5SD, ☎ 0702 520520

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berkshire RG3 5AN, ☎ 0734 452416.

Roberta Smith DTP, 190 Fallodon Way, Hampstead Garden Suburb, London NW11 6JE, ☎ 081 455 1626.

Scribble PD, 14 Woolner Close, Barham, Suffolk IP6 0DL

***SeaSoft Computing,** The Business Centre, 1st Floor, 80 Woodlands Avenue, Rustington, W. Sussex BN16 3EY. ☎ 0903 850378.

Sector 16, 160 Hollow Way, Cowley, Oxford, ☎ 0865 774472.

17-Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire WF1 1DH. Phone: 0924 366982

Softville, 35 Market Parade, Havant, Hants PO9 1PY ☎ 0705 498199

Software Expressions, Unit 4, 44 Beauley Road, Southville, Bristol BS3 1PY, ☎ 0272 639593.

Startronics, 4 Arnold Drive, Droylsden, Manchester M35 6RE, ☎ 061 370 9115.

Tazmania PD. Contact M Hewson, 4 Boultham Avenue, Lincoln LN5 7XZ, ☎ 0522 538706 (after 6 pm).

Telescan Computer Services, Handsworth Road, Blackpool FY5 1SB, ☎ 0253 22296.

Trevan Designs Ltd, PO Box 13, Aldershot, Hants. GU12 6YX, ☎ 0483 725905 (note: modem line, not voice).

Vally PD, PO Box 15, Peterlee, Co Durham SR8 1NZ, ☎ 091 587 1195.

Virus Free PD, 31 Farringdon Road, Swindon, Wiltshire SN1 5AR ☎ 0793 512321

***Visage Computers PDL.** 18 Station Road, Ilkeston, Derbyshire DE7 5LD, ☎ 0602 444501.

Your Choice PD Library, 39 Lambton Road, Chorlton-cum-Hardy, Manchester M21 1ZJ. Phone 061 881 8994.

BUYER BEWARE: The inclusion of a PD library in this directory does not imply that *Amiga Shopper* endorses or recommends any PD library in any way. We can accept no responsibility for any dealings you may enter into or for any difficulties you may encounter.

- When you write to any of these libraries for a catalogue, include an SAE for its return. Some libraries ask that you send a blank disk as well.
- If a library is named in a review, this means that that library provided us with the disk reviewed. Given that PD can be freely copied, the same program may well be available legitimately from several libraries.
- If you run a PD library not listed here and wish to be included, or if you want to amend any information given, send full details and a copy of your latest catalogue to: **PD Directory, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.**

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M194+Jesuc One's (2) (A)
M230+Now Music (1-15)
M262+A to Z C64 Tunes (4) (A)
M274+LSD Techno Warrior (A)
M276+Vivaldi 4 Seasons
M293+Bach Concerto 5/6 (A)
M314+Dick Tracy (2) (A)
M317+Freddy Rapp (A)
M318+Madonna Immaculate Col (A)

EDUCATION

E001+ Kids Paint (A)
E002+ Colour It (A)
E003+ Treasure Search (A)
E004+ Learn & Play I
E005+ Learn & Play II
E006+ Spanish Translator (A)
E007+ Education Graphics
E008 Mr Men
E009+ Astronomy (A)
E010+ Simon & Space Math (A)
E011+ Education Disk 1 (A)
E012+ Education Disk 2 (A)
E013+ Education Disk 3 (A)
E014+ Education Disk 4 (A)
E015+ Education Disk 5 (A)
E016+ Education Disk 6
E019+ Dinosaurs (A)
E020 World Database
E021+ Story Land II (A)
E022+ Language Tutor (A)
E023+ Talking Colouring (A)
E024+ Easy Spell II (A)
E025+ Scrabble (A)
E026+ Words (A)
E027+ Oswald (A)
E028+ Ariochs Astrology (A)
E029+ Ariochs Astrology (A)
E30+ Evolution (A)
E31+ IQ Test + IQ Games (A)
E33+ Keyclick II
E35+ Chess Helper (A)
E36+ Basic Tutor (A)
E38+ Amiga Tutorial (A)
E39+ Postman Pat (A)
E40+ Guide to Back Pain (A)
E41+ Kid Alphabet (A)
E42+ Fraction & Sliquest (A)
E43+ Math Master (A)
E44+ Steam Engine V2 (A)
E45+ Petrol Engine (A)
E46+ Gas Turbine Engine (A)
E50+ Dream for Angels (A)
E51+ Invisible World (A)
E52+ Fish Tank Sim
E54+ Demolit Mission (A)
E55+ Word Power (A)
E56+ Worm Hole (A)
E57+ Apple Catcher (A)
E58+ Maze & Crypok (A)
E59+ Verb Quiz (A)
E61+ King James Bible A (A)
E66+ Tarot A (A)
E67+ Tarot Disk (A) B
E68+ Gallow (A)
E69+ Treasure Trap
E70+ Math Drills (A)
E71+ Error Info (A)
E73+ Picture & Letter (A)
E74+ Amiga Begin Guide (A)
E75+ World War 2 (A)

CLIPART

CA01+ Colour Cartoon
C015+ FS Clipart (1-5)
C024+ Harlequin Vol1
C025+ Harlequin Vol 2
C026+ Harlequin Video 1
C027+ Dynamite Fonts 1
C028+ Amsoft Font Clip 1
C029+ Amsoft Font Clip 2
C030+ Various Fonts
C031+ Exile Font Clipart
C032+ Disney Clipart
C033+ Cosmic Clipart
C034+ Space Clipart
C035+ Gelenite Fonts (3)
C043+ Rip-Font & Logo
C044+ Colour Clip Art 1
C051+ Clip Art Vol (1-20)
C101+ IFF Pic Clipart (1-24)

FONTS

F001+ F5 Font (1-5)
F015+ Deluxe Paint Font 1
F016+ Deluxe Paint Font 2
F017+ Deluxe Paint Font 3
F018+ Deluxe Paint Font 4
F020+ Halc Font (3)
F023+ Computer Eye Font 1
F024+ Computer Eye Font 2
F025+ Fancy Font Volume 1
F040+ Digi Font Volume 1
F045+ Mega Font Volume 1
F050+PS Logo Font (1-9)
F070+ Pagestream Font (1-6)

SAMPLES

S001 Sample ST Vol (1-50)
S151 Mega Modules (1-6)
S171 House Samples A
S172 House Samples B
S173 House Samples C
S174 Noise Less, Mozart
S175 Korge Sample (3)
S201 ST Modules (1-40)
S401 NT Modules (1-3)
S501 Instrument (1-5) 1

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E084 ASTROLOGY PACK (4 disks)
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G490 MEGA BALL 2 (Just released)
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G494 EXTREME VIOLENCE (new)
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U622 ACTION REPLAY V4 (A1200)
Freeze, copy, rip gfx & music, infinite lives, MC Monitor etc.
U633 CHEAT COMPENDIUM (new)
NEW cheat & compete solution for 452 (old & new) games
U637 DISKS REPAIR KIT II
repair, salvage & copy for hard disk & floppy disk.
U639 DISK SALVAGE V2 (latest)
New..salvage program etc from damaged HD & floppy disks.
U640 HOW TO CODE IN C (2 disks)
New.. teach you how to program the C language (tutor).
U645 PC EMULATOR 2 (new)
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U650 COPY & CRACK TOOL 2 (new)
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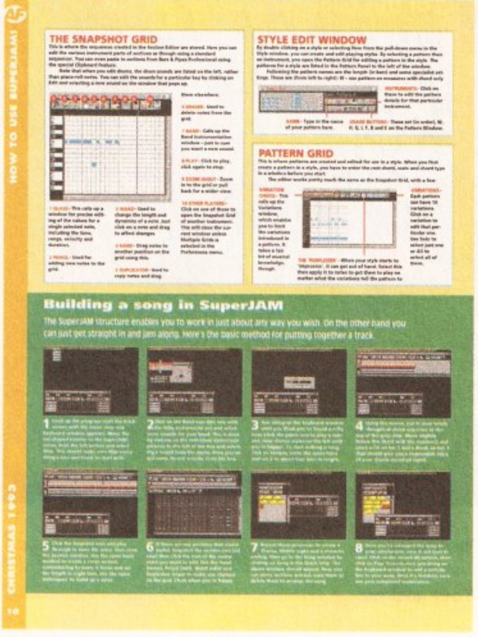
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CHRISTMAS 1993

software, SuperJAM!

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CAFFEINE FREE – written in Blitz Basic, this great gravitating blaster includes full source code.

XAP – more shoot-em-up mayhem with this demo of an addictive and peculiar Shareware game.

special bumper Christmas issue

PRODUCT LOCATOR

PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN

***Amiga Shopper* Buyer's Guide tells you what's hot and what's not in the Amiga market. It's a comprehensive guide to help you make the right buying decisions. We'll be updating it as new products are released. This month we deal with public domain software. For reasons of space, it may not include every PD package ever produced for the Amiga – for details of the latest products, see our regular PD reviews section (see page 111).**

BUSINESS SOFTWARE

Program	Library	Disk	Type	Issue	Rating
AMaster	Fred Fish	Fish 824	Simple Adress book database	27	**
AZSpell	Digitz	Utl277	Spell checker	13	****
Account Master	Various	–	Home accounts program	19	****
AmiBase Pro 3	AmigaNuts	–	Powerful database	9	****
AmiCash	PS Soft	V630	Home accounts	16	***
AmigaDex	PD Soft	V757	Pop up address book	19	*****
AmigaFox	Office Choice	U173	Combine text with graphics	8	**
Atbl	Fred Fish	Fish 746	Unix-like table formatting utility	22	****
BBase III	Fred Fish	Fish 860	Powerful database program	28	*****
BuddBase 1	Deja Vu	L/28	Powerful database program	22	*****
Cruiseword	PD Majik	–	Word processor	16	**
DataBench	Fred Fish	820	Very good PD database	26	****
EasyBanker	GTS	Home2	Home finance program	10	****
Epoch	NBS	U726	Pop up address book and calendar	22	**
Forms Really Unlimited	PD Soft	V782	Create your own business forms	21	*
Home Business Pack	Anglia PD	HB1	Database, spreadsheet, wp	25	*****
Home Manager	PD Soft	V660	Personal organiser	16	*****
HomeHelp	GTS	Home1	Computerised grocery lists	10	****
I-Man	GTS	Home2	Inventory list management	10	***
Inspire Demo	Fred Fish	815	Powerful word processor	26	*****
JCGraph Demo	Fred Fish	Fish 760	Demo of shareware graph program	23	*****
Liner	Fred Fish	285	Ideas processor like Flow	10	****
MultiPlot	Fred Fish	467	Data graphing program	7	****
NewPRT	Digitz	149	Printer drivers for PageStream	10	****
PageStreamFonts	Digitz	149	Fonts for PageStream	10	*****
PaperBack!	Fred Fish	Fish 749	Create printed booklets with ease	22	*****
Philo	Startronics	N/A	Databases for beginners	21	*
Power Base	Deja Vu	Licenseware	Database	15	*****
Power Planner	Deja Vu	Licenseware	Diary/telephone book	15	***
PowerSnap	Fred Fish	542	Grab screen text as ASCII file	8	*****
PowerText	Deja Vu	Licenseware	Word processor	18	*****
QuickFile	Fred Fish	820	Absolutely awful PD database!	26	None!
Stock Control 1.0	Deja Vu	L/111	Powerful stock control utility	23	****
TextEngine 3.0	Digitz	277	Word processor	13	***
TextPlus 3.0	PDSoft	V261	Word processor	1	****
UEdit	AmigaNuts	1162	Text editor	8	****
WBase	Anglia PD	U4015	Pop up Workbench database	18	**
WFILE	Fred Fish	776	Convert PC and Mac text files	24	****
Will&Testament	PD Soft	V706	Template for wills	19	*****
Word Power	Deja Vu	Licenseware	Spell checker	17	****
WordWright	PDSoft	V28	Word processor	13	****
CDTV Player	Fred Fish	Fish 759	Play Audio CDs from WB on A570	23	*****

MUSIC UTILITIES

CZED	Fred Fish	223	Patch editor for Casio synths	10	*****
Desktop Harp	Various	–	Collection of tunes	18	*****
K1 Editor	Fred Fish	332	Patch editor for Kawaii K1	10	*****
MED 3.11	AmigaNuts	973	Sound Tracker	1	*****
Module Master	TBAG	58	Play modules in various formats	9	****
Module Processor	AmigaNuts	864	Convert modules to executable	1	***
Nutcracker Suite	17-Bit Software	N/A	Tchaikovsky's Nutcracker suite	21	****
Rippers Disk	17Bit	1055	Rip modules from memory	5	****
Sound Ed	Fred Fish	486	Sample editor	5	****

EMULATORS

A64	AmigaNuts	1030	Commodore 64	3	*****
IBEM	VirusFree	1485	PC compatibles	3	****
QL Emulator	AmigaNuts	1030	Sinclair QL	3	***
ST Emulator	Digitz	Utl149	Atari ST	15	***
ZX Emulator	AmigaNuts	1030	ZX Spectrum	3	****

VARIOUS UTILITIES

A-Gene	AmigaNuts	933	Genealogy program	1	****
ABackUp	Fred Fish	Fish 759	Hard Disk backup utility	23	****
AIBB	PD Soft	V948	Standard benchmark program	25	*****
ARTM	17Bit	1274	System monitor	7	*****
ARestaure	Fred Fish	Fish 760	Restore deleted files	23	*****
AWP	Fred Fish	554	Animate WB2.0 clock pointer	11	****
AniMan	Fred Fish	722	Voice control your Amiga	20	***
Anti-Virus	Soft Expression	U155	Kill those viruses	19	*****
AppiSizer	Fred Fish	Fish 853	Find out size of drawer easily	28	*****
Arq	CIX Download	–	Improved system requesters	8	*****
Assassins Handy Tools	Aardvark PD	U186-188	Three disks of handy utilities	23	***
Astro 22	PD Soft	V685	Astrology program	17	****
AutoSave	Fred Fish	771	Execute ARexx script at regular intervals	24	****
Avail Mem	Fred Fish	285	Graphical memory monitor	10	***
BackUp	Fred Fish	724	Hard disk back-up utility	20	*****
Badger	Fred Fish	543	Event scheduler	13	***
Banner	TBAG	52	Print huge banners	10	****
Boot Logo	Fred Fish	Fish 754	Display picture during boot up	23	****
BootJob	Fred Fish	Fish 760	Store game bootblocks on disk	23	**
ButExchange	Fred Fish	494	Reverse mouse buttons	9	****
C Commands	PD Soft	V586	Even more CLI commands	18	***
CFX	Fred Fish	Fish 750	File type identifier	22	*****

PRODUCT LOCATOR

CG Fonts	PD Soft	V713	Lots of Compugraphic fonts	19	****
Cass 1.1	**Fred Fish**	**579**	**Make your own cassette covers**	**13**	***
ClockTick	TBAG	58	2.0-like clock mouse pointer	9	****
Command.COM	**17Bit**	**866**	**CLI commands in RAM**	**2**	***
Cook & Stitch	GTS	-	Learn to cook, stitch and brew beer!	25	***
Date2Day	**Fred Fish**	**Fish 826**	**Tells you day when given date**	**27**	*
DCopy	AmigaNuts	700	Disk copier	10	****
DeafLab	**Fred Fish**	**494**	**Sign language utility**	**9**	***
DevRen	GTS	Utils1	Rename devices including DF0	10	****
Disk Manager 2	**Various**	**–**	**Disk cataloguing program**	**20**	****
DiskMate	Fred Fish	754	Powerful Workbench disk copier	28	*****
DiskSpeed	**GTS**	**Utils1**	**Disk drive benchmark program**	**10**	****
Distance	Deja Vu	Licenseware	HAM radio utility	20	****
DragIt	**Fred Fish**	**792**	**Drag a window without using drag bar**	**25**	*****
Ego Mouse	Fred Fish	778	Make your mouse point where it's going	24	**
Electronic baby book	**PD Soft**	**V658**	**Record your baby's details**	**16**	****
Elements	Fred Fish	593	Periodic table of elements	13	****
FastDiskII	**GTS**	**Utils1**	**Disk optimiser**	**10**	***
FastIntroMaker	Fred Fish	814	Create your own scolly demos	26	****
File & HD Utilities 6	**PD Soft**	**V978**	**Selection of file and hard disk utilities**	**25**	**
File & HD Utils 3	PD Soft	V815	Various file and hard disk utilities	21	****
File and HD management	**PD Soft**	**V573**	**Hard drive utilities**	**15**	*****
File and HD management 2	PD Soft	V575	More hard drive utilities	16	***
FileMaster	**GTS**	**Utils1**	**Binary file editor**	**10**	*****
FileSearch	Fred Fish	531	Find files on a hard disk	11	***
Filer	**Fred Fish**	**562**	**SID clone for Workbench 2.0**	**11**	****
FindIt	Fred Fish	Fish 731	Search for named files on any disk	22	****
Flash Disk	**GTS**	**Utils2**	**Disk optimiser**	**10**	****
Font Manager	Digitz	149	Manage your bitmap fonts	10	****
Fontviewer	**Fred Fish**	**Fish 732**	**Keep track of all your bitmapped fonts**	**22**	****
Format 1.1	Fred Fish	535	Replacement disk formatter	11	*****
Formatter	**GTS**	**Utils1**	**Replacement disk formatter**	**10**	***
GeoTime	Fred Fish	Fish 758	World Time Zone Display	23	*
GrabKick	**Fred Fish**	**Fish 831**	**Grabs Kickstart ROM to disk file**	**27**	****
GraphPaper	Fred Fish	Fish 851	Prints graph paper to printer	28	***
HAM Radio	**Aardvark PD**	**–**	**HAM radio utilities**	**18**	****
HAMLab 2 Demo	Fred Fish	726	Powerful image processor	20	*****
Hard Drive Special	**GTS**	**–**	**Collection of hard drive utils**	**9**	*****
Hyper	Fred Fish	Fish 853	View AmigaGuide files	28	*
Icon Mania	**PD Soft**	**V730**	**Lots of new icons**	**19**	**
Imploder	Fred Fish	422	File compressor	7	***
InputLock	**Fred Fish**	**494**	**Turn off mouse and keyboard**	**9**	****
Install 1.2	Fred Fish	817	Workbench Install disk utility	26	*****
KeyCall	**Fred Fish**	**Fish 854**	**Load programs via hotkeys**	**28**	*****
KingFisher	GTS	-	Database of Fred Fish disks	5	*****
LC24-200 Fonts	**NBS**	**L503**	**Fonts for Star printers**	**8**	****
LS	Fred Fish	772	Very powerful Unix-like 'LS' command	24	*****
Label Print	**Fred Fish**	**227**	**Disk label printer**	**10**	***
LabelMaker	Fred Fish	548	Create disk labels	11	***
LockDevice	**GTS**	**Utils1**	**Better AmigaDOS 'Lock' command**	**10**	****
LockIt	Fred Fish	798	Password protect your files	25	****
MKSLens	**Fred Fish**	**574**	**Magnify area of screen**	**11**	***
Macro 1.0	Fred Fish	786	Record and playback user inputs	24	****
Magnetic Pages	**PD Soft**	**V688**	**Create your own disk magazine**	**17**	*****
Main Event	Soft Expression	U149	Event scheduler	20	****
Master Virus Killer	**AmigaNuts**	**971**	**Virus killer**	**1**	****
MegaStation	Five Star PD	U195	More CLI commands	18	***
Megad 2.0	**Fred Fish**	**Fish 736**	**Brilliant SID-like directory utility**	**22**	*****
Menu Runner	AmigaNuts	1024	Run programs from menu	8	***
MessyDOS	**NBS**	**U619**	**Read and write PC disks**	**6**	*****
MessySID 2	PDSoft	V490	Access PC disks with ease	13	*****
Minix Demo	**PD Soft**	**V711**	**Demo of Unix-like OS**	**19**	*****
Morse Tutor	Deja Vu	L101	Teach yourself Morse Code	19	*****
New Aqua	**Fred Fish**	**Fish 837**	**Database of Fred Fish library**	**27**	*****
NicePrefs	Fred Fish	780	Extra WB 2.0 Preference programs	24	*****
Outline fonts	**George Thompson**	**–**	**For ProPage and PageStream**	**16**	*****
PWKeys	Fred Fish	494	Manipulate windows with hotkeys	9	***
Pager	**Fred Fish**	**Fish 824**	**Add page numbers to documents**	**27**	***
Password	Fred Fish	804	Password protect a hard drive	26	****
Pools Tools	**NBS**	**U725**	**Pools predictor**	**22**	***
PopUpMenu	Fred Fish	Fish 756	Modified Workbench menus	23	****
Post	**Fred Fish**	**Fish 828-830**	**PostScript interpreter**	**27**	*****
PowerPacker Utils	Fred Fish	542	Utilities for PowerPacker	11	***
Printer Drivers	**PD Soft**	**V724**	**Star and Canon printer drivers**	**19**	*****
QC	Fred Fish	788	Display information on CLI/Shell	24	***
QDisk	**Fred Fish**	**Fish 853**	**Get size of AmigaDOS volumes**	**28**	****
QMouse	Fred Fish	789	Mouse accelerator utility	24	*****
RMBShift	**Fred Fish**	**547**	**Select multiple icons**	**11**	****
Recover	Digitz	149	Rescue files from corrupt disks	10	***
RunMe	**AmigaNuts**	**1186**	**Run programs from menu**	**9**	*****
S-Text	Fred Fish	Fish 760	Create stand-alone text files!	23	**
School TimeTable	**AmigaNuts**	**1100**	**Generate school timetables**	**5**	***
ScreenMOD	TBAG	58	Modify screens and windows	9	***
SetNoClick	**GTS**	**Utils1**	**Turn off annoying drive click**	**10**	***
Sid 2	17Bit	–	Directory utility	16	*****
SingleFile	**Fred Fish**	**Fish 851**	**Checks hard disk for duplicate files**	**28**	***
Sksh	Fred Fish	791	Unix 'ksh'-like Shell	25	*****
Smart Icon	**Fred Fish**	**316**	**Iconifies windows**	**10**	***
Snap 1.4	Fred Fish	326	Grab screen text into clipboard	10	****
StarClock	**Fred Fish**	**814**	**Display time in StarTrek fashion**	**26**	***
SuperDark	Fred Fish	Fish 835	Modular screen blanker	27	****
Super Format	**Fred Fish**	**Fish 835**	**Workbench 2.1-like disk formatter**	**27**	*****
SysInfo	Fred Fish	571	System information program	11	*****

PRODUCT LOCATOR

PUBLIC DOMAIN

SysInfo 3.11	**Fred Fish**	**–**	**Latest version of system analyzer**	**26**	*****
ToolsDemon	Fred Fish	561	Run programs for 2.0 Tools menu	11	****
Touch typing tutor	**NBS**	**CLU03**	**Teach yourself touch typing**	**17**	****
Track Display	GTS	Utils1	Shows position of drive heads	10	***
Twilight Zone	**Fred Fish**	**782**	**After Dark-like screen blanking utility**	**24**	*****
UnixDirs	Fred Fish	Fish 850	Unix-like directory movement	27	*****
VCR Tape Filer	**Fred Fish**	**721**	**Organise your video collection**	**20**	***
VirusZ	Fred Fish	786	Virus Killer	26	*****
WordFinder-Plus	**Virus Free PD**	**Licenseware**	**Crossword puzzle solver**	**21**	****
Words 3	AmigaNuts	–	Solve anagrams	9	***
X-Stitch	**Deja Vu**	**Licenseware**	**Pics to knitting patterns**	**19**	****
XSearch	Fred Fish	804	File searching utility	26	***
COMMS UTILITIES					
All 1.35	**fred Fish**	**825**	**Intuition-based archiving toll**	**27**	****
BBBBS	Fred Fish	729	Bulletin Board System	20	****
LHA 1.11	**Fred Fish**	**593**	**Archiving utility**	**13**	****
NComm	17Bit	1275	Terminal Program	7	****
Phone Line Watcher	**TBAG**	**58**	**Keep track of phone bill**	**9**	****
Term 3.1	Fred Fish	Fish 831-833	Best Amiga comms program available	27	*****
PROGRAMMING UTILITIES					
Acc Assembler	**AmigaNuts**	**–**	**Fast Assembler**	**6**	*****
Amiga E	Fred Fish	–	Programming language compiler	26	****
Amiga Pascal	**Fred Fish**	**Fish 849**	**Amiga version of Pascal language**	**27**	****
BRef	Fred Fish	494	BASIC cross referencing utility	9	****
Copper Master	**AmigaNuts**	**1083**	**Generate Copper Lists**	**5**	***
DICE	Fred Fish	443	C Compiler	3	*****
DPU	**Fred Fish**	**721**	**Hex disk and file editor**	**20**	****
Frac	AmigaNuts	1251	Adventure game creator	18	****
GadTool Box	**Fred Fish**	**Fish 731**	**Create Intuition font ends**	**22**	*****
ICalc	Fred Fish	Fish 742	Brilliant Shell-based calculator	22	*****
MIDI Library	**Fred Fish**	**227**	**Program MIDI applications**	**9**	*****
Map Editor	AmigaNuts	–	Map editor for AMOS	19	****
MegaEd	**Fred Fish**	**Fish 743**	**Powerful text editor**	**22**	*****
MemSnap	Fred Fish	Fish 826	Trace lost allocated memory pools	27	****
MinTerm	**Fred Fish**	**Fish 560**	**Calculate blitter minterms**	**28**	****
NorthC	AmigaNuts	1112	C Compiler	6	****
PCQ Pascal	**AmigaNuts**	**1113**	**Pascal compiler**	**6**	****
Power Logo	EdLib	24	Enhanced Logo Interpreter	9	***
Remm and Rams	**Deja Vu**	**Licenseware**	**Map editor and scroller utilities**	**17**	***
Stripit	Fred Fish	Fish 750	Strip comments from ascii source code	22	****
GRAPHICS UTILITIES					
3D Objects Disk 1	**AmigaNuts**	**–**	**Collection of Sculpt Objects**	**8**	****
3DFont	17Bit	1007	Text to Sculpt Object	3	***
AMOS Paint	**Deja Vu**	**83**	**Paint package**	**3**	***
BezSurf 2	Fred Fish	315	Create shaded 3D objects	10	***
CMDemo	**Fred Fish**	**Fish 757**	**Demo of ASDG's CineMorph**	**23**	***
Converters	17Bit	1221	Image conversion tools	9	***
DPaint Tutorial	**Soft Express**	**U160**	**Comprehensive DPaint tutorial**	**22**	*****
Deluxe Draw	Slipped Disk	18	Paint package	3	**
Desktop video pack 2	**Anglia PD**	**–**	**Various DTV utilities inc titler**	**17**	***
DrawMap	Fred Fish	315	Generate maps of the world	10	***
FracScape	**Various**	**–**	**Fractal landscape generator**	**18**	*****
HAMLab	AmigaNuts	1149	Image processing	3	**
ImageLab	**PDSoft**	**V518**	**Image processing program**	**12**	****
LandBuild	AmigaNuts	1190	Fractal landscape generator	9	**
Mandel Mountains	**Softville**	**751**	**Creates 3D Mandelbrots**	**5**	****
MapTrix	Fred Fish	Fish 853	Fractal texture mapping utility	28	*****
PictSaver	**Fred Fish**	**543**	**Grab screens in IFF Format**	**9**	*****
Plasma	Fred Fish	573	Fast fractals program	11	***
SkyPaint	**TBAG**	**37**	**Text-based graphics**	**3**	***
SlideShow Kit	VirusFree	1465	Create your own slideshows	3	****
SpectraPaint	**Slipped Disk**	**19**	**Paint package**	**3**	****
Sprite Designer	AmigaNuts	1102	Create animated sprites	6	**
Vector Designer	**AmigaNuts**	**–**	**Vector graphics designer**	**9**	**
Video Text Displayer	AmigaNuts	1199	Basic text scroller	9	***
EDUCATIONAL SOFTWARE					
4 Stroke Engine	**PD Soft**	**V738**	**Demonstrates 4 stroke engine**	**19**	****
CPK	Fred Fish	809	Create rendered molecule illustrations	26	****
Complete Bible	**PD Soft**	**V715-717**	**Complete Bible on three disks**	**19**	****
Constellations	Astronomy News	–	Info on stellar constellations	20	***
Drafu	**fred Fish**	**Fish 854**	**Function plotting utility**	**28**	***
JigMania	Deja Vu	LPD13	Maths/Logic	5	****
Learn&Play	**Riverdene**	**Mis637**	**Maths/Reflex/Logic**	**5**	****
MathPlot	**Fred Fish**	**Fish 850**	**Mathematical function plotter**	**27**	****
Maths Reflex	Anglia PD	C728	Test your maths	20	****
Maths4Fun	**AmigaNuts**	**1146**	**Maths**	**9**	****
Quingo	Deja Vu	LPD21	3 'R's	5	***
Runes	**DTP**	**OS125**	**Mystic runes explained**	**18**	***
Shapes	Riverdene	GAM907	Maths/Logic	5	****
Simon	**Deja Vu**	**APD135**	**Reflex/Memory**	**5**	***
Space Maths	Deja Vu	APD135	Maths	5	****
Spell4Fun	**AmigaNuts**	**1146**	**Spelling**	**9**	****
TouchStones	Deja Vu	LPD18	Logic	5	****
Treasure Search	**Deja Vu**	**APD2**	**Maths/Logic**	**5**	***
WarBook	Asgard Software	Freeware	History of World War 2	21	***
ChemBalance	**Fred Fish**	**Fish 759**	**Balance chemical equations**	**23**	****
XTables	AmigaNuts	1146	Maths	9	*****

FOR SUPPLIER INFORMATION ON ALL THE PRODUCTS LISTED ABOVE SEE UK PD HOUSES PAGE 120

BUYING ADVICE FOR SHOPPERS

Whether you're buying over the phone or at a local store, here's our advice on getting what you want.

BUYING IN PERSON

• Where possible, always test any software and hardware in the shop before taking it home, to make sure that everything works properly.
• Make sure you have all the necessary leads, manuals or other accessories you should have.
• Don't forget to keep your receipt.

BUYING BY PHONE

• Be as clear as possible when stating what you want to buy. Make sure you confirm all the technical details of what you are buying. Some things to bear in mind are version numbers, memory requirements, other required hardware or software and compatibility with your particular model of Amiga (that is, make sure you know which version of Kickstart you have).
• Check the price you are asked to pay, and make sure that it's the same as the price advertised.
• Check that what you are ordering is actually in stock.
• Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
• Make a note of the date and time when you order the product.

BUYING BY POST

As with buying by phone, you should clearly state exactly what it is you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up where necessary. You should also make sure you keep copies of all correspondence both to and from the company concerned.

MAKING RETURNS

Whichever method you use to buy, you are entitled to return a product if it fails to meet any one of the following three criteria:

❶ The goods must be of "merchantable quality".
❷ They must be "as described".
❸ They must be fit for the purpose for which they were sold or for the purpose you specified when ordering.

If they fail to satisfy any or all of the criteria, then you are then entitled to:
• Return them for a refund.
• Receive compensation for part of the value.
• Get a replacement or free repair.

When returning anything, ensure that you have proof of purchase and that you return the item as soon as possible after receiving it. For this reason it is important that you check as soon as it is delivered to make sure everything you ordered is there and works as it is supposed to.

HOW TO PAY

Paying by credit card is the most sensible way, whether buying in person, by post or on the phone, because you may be able to claim your money back from the credit card company even if the firm you ordered from has gone bust or refuses to help sort out your problem.

Otherwise, you should pay by crossed cheque or postal order – never send coins or notes through the mail.

GETTING REPAIRS

Always check the conditions of the guarantee, and servicing and replacement policy, so that you know what level of support to expect. Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions contained in the guarantee.

BUYING PD

Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

Shopping around is still important when buying PD because different sources charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are, in theory, supposed to be non-profit-making operations. AS

BUYING BY MAIL

• Before you send any money, ring the supplier to confirm that the item you want is in stock and when the delivery is likely to be made. Enquire about returning unwanted goods and the supplier's refund policy. Find out about hidden extras like postage and packing charges, and whether the prices quoted include VAT.

• Beware of companies that do not include an address in their adverts.

• If ordering goods of more than £100 in total value, always try to use a credit card – if anything goes wrong, you will be legally entitled to claim against the credit card company, even if the retailer has gone bust. You may also get extra insurance – check with the credit card company.

• Always buy from the most recent issue of *Amiga Shopper.*

• When your order arrives, check everything carefully. If anything is missing, don't use the product at all – contact the supplier immediately. If something doesn't work, make the obvious checks such as the fuse, but don't try to fix the product.

• If a problem does arise, contact the supplier in the first instance and calmly and politely explain your problem. In most cases these things are merely a mix-up or a misunderstanding that the supplier will happily put right. If you think you have a genuine grievance that has not been resolved, you might consider contacting your local Trading Standards Officer (the number will be in the phone directory – check the local council listing).

• Always keep records of correspondence with any mail order company you deal with and also make a note of where and when you saw the product advertised. False or misleading advertising is an offence, and suppliers must stick to what they've said in adverts.

ADVERTISERS INDEX

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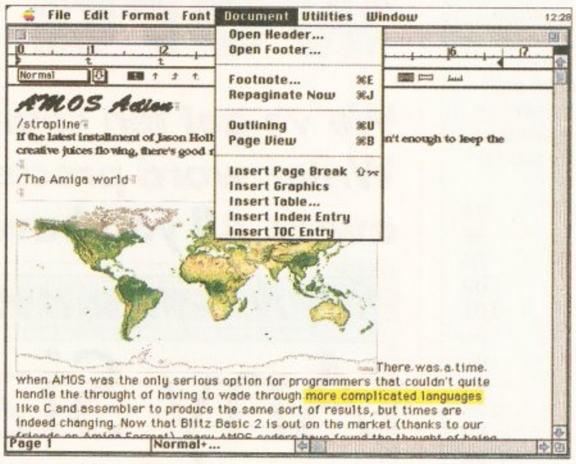
IN NEXT MONTH'S ISSUE

Perhaps one of the most annoying things about being an Amiga owner is the knowledge that the PC, a machine inferior to the Amiga in just about every respect, has gained much wider acceptance in the commercial world.

Okay, the Amiga's certainly king when it comes to video and graphics work, but most businessmen wouldn't even consider it when looking for a machine to run a database, word processor or desktop publishing package.

Why should we care which machine some be-suited businessman buys, I can almost, by virtue of the cosmic aither that binds us all, sense you asking? Simply because if more of them were buying Amigas, we'd be seeing lots more decent software for the thing. That's not to say that there isn't some decent Amiga software – there is – but let's face it, it doesn't really compete with the sort of stuff available for the Mac or PC.

Next month we're going to be appraising this situation. We hope to talk to the big boys at Microsoft and Quark (makers of *Word* and *XPress* respectively) and ask them if they have any plans to port their programs to the Amiga. And if not, why not? We'll also be analysing how easy such a port would be.



Microsoft Word, probably one of the best word processors on any system. Next month we ask if we'll ever see it on the Amiga, and wonder if we really need it anyway?

There's another side to the coin that we'll be considering, too. Do we really need these programs when the new breed of Amiga software – *Final Writer*, *PageStream 3* and *Wordworth 3*, for example – are looking so good? We'll be reviewing the first of these, previewing the other two, and assessing just how well they compare with the competition on Mac and PC.

Part of the reason such top-quality software is available for the Amiga is because Commodore, with the A1200, have raised the power of the base Amiga. Software manufacturers can be sure that there are a large number of potential users out there with powerful machines. Consequently, they can afford to make software that relies on this power. Next month's feature will be taking a look at what else Commodore could be doing to help.

Issue 34 of *Amiga Shopper* goes on sale Tuesday 4 January, and jolly good it will be too. AS

WIN A YEAR'S FREE SUBSCRIPTION

What were the ingredients for the spaghetti sauce made by Clamenza in the film of *The Godfather*? Send your answers to "Tomatoes certainly", *Amiga Shopper*, 29 Monmouth Street, Bath BA1 2DL. The closing date is Tuesday 7 December. The first correct answer wins. Last month's winner is Vicki Baldwin of Finchley. The answer was: David Janssen.

YOU'VE WON!

The ten winners of November's *Score Some Speed* competition are: G Collwill of Bristol, A Daniel of Sheffield, J Richardson of Cambridge, C Parkes of Basingstoke, J Rumball of Wigston, H Pelly of Haverhill, S Restorick of Liverpool, D Woolnough of Beccles, R Nurdern of Risca near Newport and M Cavers of Duns in Berwickshire. Congratulations.

Each wins a copy of the *AMOS Pro Compiler*, courtesy of Europress Software.

MAG*SAVE

AMIGA SHOPPER SELLS LIKE DON CORLEONE'S OLIVE OIL – SO MAKE SURE YOU RESERVE A COPY AT YOUR LOCAL NEWSAGENT NOW!

DEAR NEWSAGENT, Please reserve/deliver me a copy of *Amiga Shopper* every month, beginning with the February issue, which goes on sale on Tuesday 4 January.

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• NOTE TO NEWSAGENT: *Amiga Shopper* is published by Future Publishing (0225 442244) and is available from your local wholesaler.

• PS Oh, and if you do have any problems getting hold of your favourite Amiga mag, call Kate Elston on 0225 442244 and she'll help you out.

AMIGA SHOPPER AT-A-GLANCE GUIDE

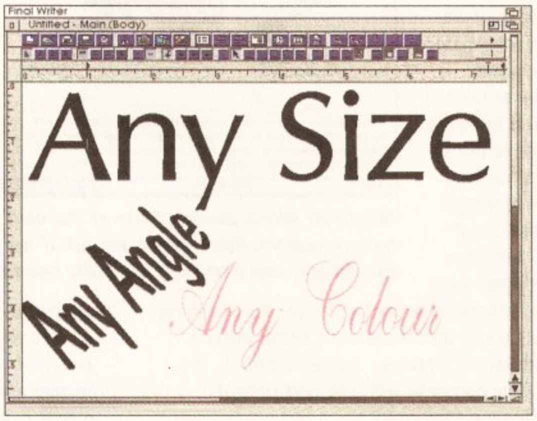
To help you find what you want quickly and easily, here is a cross-referenced list of everything covered in this month's *Amiga Shopper*. You'll find a detailed index to the problem-solving *Amiga Answers* section on page 37. The page numbers given are for the first page of the article in which the subject is mentioned.

Are there any products or subjects you'd like us to take a look at? Well, just drop a line to: *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

WIN • WIN • WIN • WIN • WIN • WIN

A new breed of word processor

We've got ten copies of SoftWood's brand new Final Writer word processor, each worth £129.95, to give away. All you have to do is answer the questions.



Final Writer gives you the sort of typographical control that you'd normally expect from a DTP package.

We announced the arrival of *Final Writer*, the latest addition to SoftWood's range of word processors, back in issue 32. Then we reckoned it could well be the first of a new breed of serious software for the Amiga. Well, now's your chance to decide for yourself.

We've got ten copies of the package to give away, each kindly donated by the good folk at SoftWood Europe, and each worth £129.95. And one of them could be yours for little more than the price of a stamp and envelope, and a few moments of your time.

So what can we say about *Final Writer* to whet your appetite? We could mention that it's going to be the new top-of-the-range word processor from SoftWood, with many more features than the company's already renowned *Final Copy* program. And we could mention some specific features.

Tell you what – let's mention some specific features...

For a start, the program can be driven almost exclusively via clicking on buttons contained in a tool bar (a means of operation that should be more than familiar to *Deluxe Paint* users). You can switch between several tool bars depending on the kind of document you are using. They are also all customisable.

The customisability (great word, eh?) of the program doesn't end there. It will also enable you to create macros to automate common layout procedures.

But that's not all. Oh no. *Final Writer* is fully PostScript-compatible. Not only will it print to a PostScript printer, but it will also send PostScript fonts (it comes supplied with over 110 of them) to other printers too.

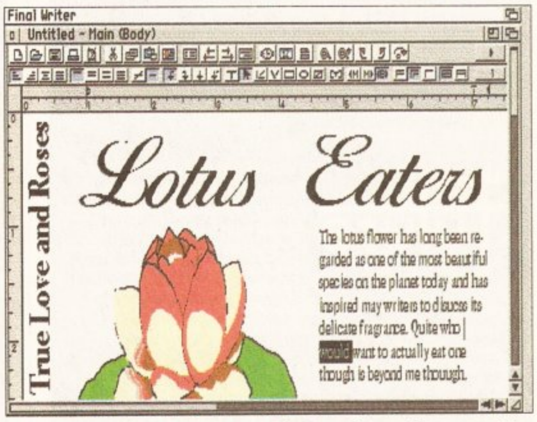
A number of structured drawing facilities are provided in the package, and it is capable of importing graphics in both Amiga IFF and Encapsulated PostScript Format (the latter type being scalable). Just to get you going, *Final Writer* comes with 100 clip art images.

To win, answer the questions in the box. Send your answers written on the back of a postcard (or a sealed envelope), along with:

1. your name and address,
2. which, if any, word processor you currently use, and
3. what two features you need most from a WP, to this address:

Write on
Amiga Shopper
29 Monmouth Street
Bath BA1 2DL

The closing date for entries is Friday 7 January. The first ten correct entries drawn from the editor's receptacle will win. Send only one entry per household and please state if you don't want your name included on a mailing list. The competition is not open to employees of Future Publishing or SoftWood. AS



It goes without saying that high quality colour graphics and text can be freely mixed in the same document.

THE QUESTIONS

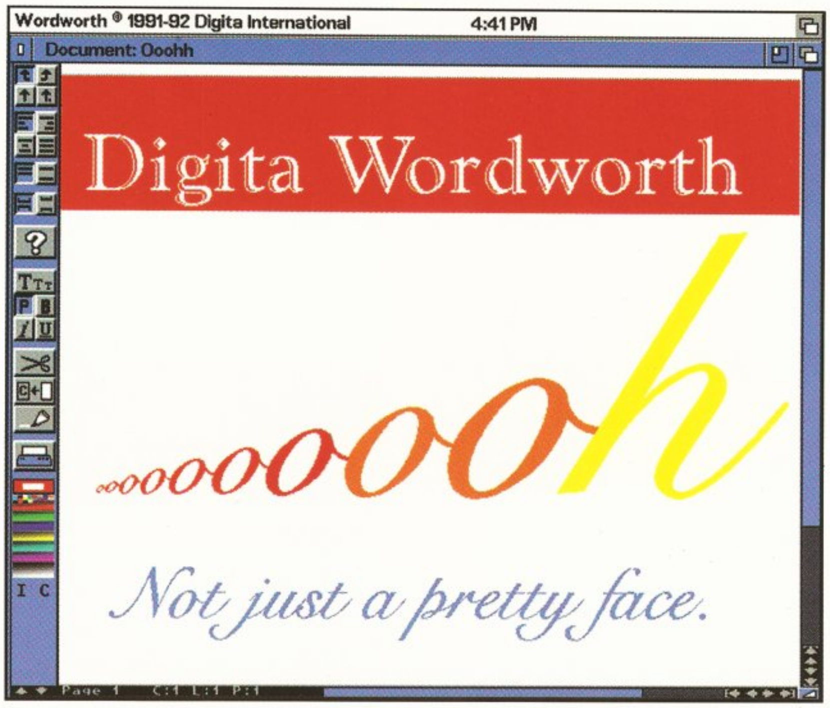
1. Who wrote *A Christmas Carol*?
(a) Umberto Eco
(b) Charles Dickens
(c) Gustav Flaubert

2. Who wrote the stylistic classic *Madame Bovary*?
(a) Umberto Eco
(b) Charles Dickens
(c) Gustav Flaubert

3. Who wrote the review of *Final Copy* back in *Amiga Shopper* 25?
(a) Umberto Eco
(b) Charles Dickens
(c) Jeff Walker

WIN • WIN • WIN • WIN • WIN • WIN

Nine reviewed One winner*



* Word processor roundup, Amiga Shopper, May 1993

(Just thought you'd like to know)

If you want to know more about award–winning Wordworth...

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—A member of the Digita group—

Power Computing's latest 32-bit memory expansion for the Amiga 1200 is now available. The PC1208 combines exceptional value with incredible features. The original PC1204 4MB 32-bit memory expansion is still available, and is exceptional value.

Simm Technology - The PC1208 uses the latest industry standard 32-bit SIMM technology which allows you to use 1MB, 2MB, 4MB and 8MB modules.

Zero Wait State - The PC1208 never leaves the processor waiting around for data, Meaning your Amiga 1200 will run at its maximum speed. Simply adding either a PC1204 or PC1208 to your Amiga 1200 will increase its processing speed by 219%.

Real-Time Battery Backed Clock - Allows files to be date-stamped with the correct time and date so that you know exactly when they were created.

Ultra Fast FPU - With the addition of a maths co-processor intensive maths operations will be accelerated by up to fifty times. The PC1208 is the only memory expansion which offers the capability to take either PGA or PLCC type FPU's.

Easy To Fit - Fitted in minutes without the need to remove the computer's case. Does not effect your warranty.

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The PC1204 & PC1208 Memory Expansion for the Commodore Amiga 1200.



The XL 1.76MB Internal & External Drive for the Commodore Amiga.



Power Computing's XL 1.76MB Drive* for any Commodore Amiga is now available. The XL Drive includes these many features:

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Software compatible - The XL series is fully compatible with all existing hardware and software.

External XL Drive £85.00
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*Requires Kickstart 2 or above. **Requires Workbench 2.1 or above.

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